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ORIGINAL LECTURES.

EXCISION OF THE KNEE.

A clinical lecture delivered at the Pennsylvania Hospital.

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GENTLEMEN: I have to-day to bring before you a case in which the operation of resection or excision of the knee-joint is called for; a case in which the articulating ends of the femur and tibia are so spoilt by disease, the result of injury, as to render the restoration of the normal state of the joint hopeless, and to necessitate surgical interference.

This little fellow, eleven years of age, says that he hurt his left knee by a fall, about six weeks before his admission to the hospital, which was on the 24th of November, 1886. For several days after the accident, he ran about and played, but was then compelled, by increasing lameness, to give the limb rest. The knee became swollen and flexed, and very painful on the slightest attempt to extend it; the skin remained natural, but was traversed by a few large superficial veins.

On the 2d of December, Dr. Roberts, who had charge of him, had him etherized, and forcibly extended the leg on the thigh. That evening his temperature rose to 103.6°, but it gradually fell again to normal. The knee, five days later, was in exactly the same condition as before.

The child's general health seemed good, but he was put upon the use of cod-liver oil, with syrup of lactophosphate of lime and syrup of iodide of iron. His appetite is now fair, and he sleeps well. This favorable state of things would not, however, continue if the local disease were allowed to run its course.

On examining the joint, we find it slightly swollen, tender, and somewhat hotter to the touch than that of the sound side. It is flexed at a right angle, and cannot be extended, the effort to straighten it causing severe pain. The patella is only very slightly movable. Note also the change in relation of the articulating surfaces; the head of the tibia has slipped backward so as to be applied to the posterior portion of the condyles, so that these latter processes seem to project forward as a double rounded mass. But although the hinge-motion of the joint is gone, there is undue lateral mobility; that is, when I grasp the thigh with one hand, and the ankle with the other, I can sway the foot from side to side as I could not if the lateral ligaments of the knee-joint were sound.

You will, of course, perceive that even if we could from this moment set aside the inflammatory process in this joint, and cause union to occur between the joint surfaces, the boy would be hopelessly crippled. We, therefore, propose to relieve the inflammation and give

the limb a useful shape, by the excision of the diseased joint.

Excision consists in laying open the joint, sawing off the diseased bones, removing all degenerated synovial membrane, placing the sawn ends of the bones accurately in contact, and closing the wound in the skin. By proper appliances we then keep the parts supported until union has taken place between the bones. In the elbow or shoulder, we try to get mobility; but in the knee, the value of the lower limb consisting in its firmness as a support for the body, this would be a disadvantage. I am aware that surgeons have sought to obtain a movable joint at the knee, but cannot now recollect having seen any report of a thoroughly satisfactory result of such an attempt.

It is of much importance, if possible, to saw through the epiphysis only, so as to save the epiphyseal junction, in order that the subsequent growth of the bone may not be interfered with; hence the slice removed from each bone should be as thin as it can be made, to embrace all of the diseased portion.

Some ingenuity has been bestowed upon the method of dividing the bones. Thus it has been proposed to saw the end of each bone in two planes at an angle to one another; the planes in one bone forming an entering, in the other, a projecting angle. My own practice has always been to carry the saw directly across each bone, but slightly slanting the blade, so as to cut each at the expense of its posterior portion; thus when united they form a very slight angle forward, which facilitates walking by enabling the patient to get some spring forward on the toes. I think the gait thus secured is decidedly better than that obtained by placing the limb perfectly straight.

Operations on the bones and joints are among the surgical procedures most distinctly concerned in the benefits of the modern antiseptic methods. Especially is this true of excision of the knee. Under the former practice, free suppuration was inevitable, and the dressings had to be changed daily. To avoid the disturbance of the limb which this involved, I, many years ago, devised a splint of which the thigh and leg portions were bracketed together, while that corresponding to the knee was arranged as a shelf to slide in and out. Under the antiseptic system this provision is needless. The dressings are not to be disturbed, unless for some special reason, for several weeks.

The child being now etherized, and the limb thoroughly cleansed, an Esmarch bandage is applied. This, like everything else which is allowed to come in contact with the part to be operated upon, has been depurated by means of the solution of bichloride of mercury.

On opening the joint at the side of the patella, you perceive at once a grayish-yellow, puffy mass protruding. This indicates a condition of the synovial membrane known as gelatinoid degeneration. I now carry an incision across the front of the joint, through the

ligament of the patella, from one side to the other. I now separate the ends of the femur and tibia, and you see the inflamed and eroded state of the articular cartilages, with a small amount of ill-conditioned pus, and a fringe of broken-down tissue about their margins. I divide the crucial ligaments, strip down the periosteum, and apply the narrow blade of a Butcher's saw at the back of the tibia. Cutting from behind forward, I remove a thin slice of the bone.

I now do the same at the lower end of the femur. Note the peculiar grayish-yellow color of the sawn surfaces, and that on that of the tibia there is a small patch which is softer and paler than the rest. When the constricting elastic band round the thigh is removed, you will see the healthy red color of the marrow return.

Now I dissect out the patella from the fibrous envelope constituted by the tendon of the quadriceps. This little bone would be useless if left, and might give rise to trouble, so that it is much better out of the way. The elastic band is now loosed from about the thigh; the bone-marrow becomes red, and the edges of the skin swell up, and a rather free flow of blood occurs, but soon slacks. No vessels appear of sufficient size to require ligation.

With this spoon-shaped, sharp-edged curette, I now scoop out the small patch of soft and diseased bone from the sawn surface of the tibia, and scrape away all the dirty, sloughy tags of serous membrane and fibrous tissue. Two sinuses extend, one from the outer side of the joint an inch or two upward along the femur, the other from the inner side of the joint a scant inch downward along the tibia; these are also curetted, and through a counter-opening at the extremity of each, a drain of several strands of fine carbolized catgut is passed, filling up the whole tract. A small pledget of the same material is packed into the cavity where the sawn end of the tibia was scraped.

The bones are now ready to be apposed, and when this is done you see that they fit accurately together; that the lateral outlines of the limb are correct, and that when looked at from the side there is seen to be a very slight angle between the axis of the thigh and that of the leg. In order to keep the sawn surfaces exactly together, I now drill each bone at two points, from the anterior wall obliquely to the sawn surfaces, and through each pair of these drill-holes I pass a suture of thick chromicized catgut, and tie it firmly. The introduction of these thick catgut sutures through the drill-holes is sometimes, as you have seen on one or two previous occasions, a matter of difficulty. I have, therefore, provided each of these with a silver-wire guide, the gut being pierced near its end with the wire, which is then wrapped around it and twisted, leaving one long end. This wire being first passed through the drill-holes, the gut is drawn after it, as you see, with the utmost ease.

The wound in the skin is now carefully closed from end to end with carbolized catgut sutures; the protective is applied, then iodoform gauze, and borated cotton, with an antiseptic gauze bandage over all. Now the limb is carefully bandaged to a Day's posterior splint, padded so as to correspond exactly with the outline of the parts. Finally, the limb, thus secured, is placed in a cradle made with a Smith's wire frame splint, for the purpose of suspending it so that the child can change his position in bed without doing any harm. The sus-

pension is made in the ordinary way, by means of a gallows-frame with a pulley sliding in the cross-piece, and a cord and tent-block.

(On the evening following the operation, the child's temperature ran up to 102.4°; and on each of the four ensuing evenings it reached a little over 100°. After this it scarcely varied from the normal. January 19th, the dressings were removed, with the idea that there might be some local cause for the slight evening rise in temperature; but none was found. On the 2d of February, the eighteenth day, the limb was dressed before the class, and found in the most satisfactory condition; the wound soundly healed, and a very marked degree of firm union between the bones.)

ORIGINAL ARTICLES.

PAROXYSMAL CARDIAC DYSPNOEA.¹

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IN very many of those valvular diseases of the heart which are accompanied by hypertrophy and secondary dilatation, dyspnoea is a prominent symptom. Under such circumstances, however, the dyspnoea is of gradual development, is often, and indeed usually, more or less persistent, and depends rather upon the secondary pulmonary and renal changes, than directly upon the cardiac lesion.

In the form of dyspnoea which I now propose to consider, and which I have designated paroxysmal cardiac dyspnoea, the difficulty in breathing is due entirely to the cardiac condition, and the consequent temporary slowing or permanent arrest of the blood current in the heart and pulmonary vessels. In this condition there are no organic or functional changes within the lungs to obstruct the entrance of air to the alveolar surfaces, and the disturbing element in the relations between the blood and air is, therefore, entirely upon the side of the vascular element, which becomes diminished in both quantity and rapidity. The symptomatic results, however, are similar in the two conditions, for the effects are the same, as is readily proved by physiological experiments, whether the air or the blood is prevented from entering the lung. Under whatever diseased conditions this form of dyspnoea may arise, it has this one essential cause, viz., a temporary or permanent arrest of the blood in the heart and pulmonary arteries, a condition which evidently must either be paroxysmal or speedily terminate in death.

When distinct valvular changes are present with consequent hypertrophy and secondary dilatation, a gradually developing chain of symptoms precedes and gives warning of the approach of more serious conditions, and the typical history of the case seldom allows of an error in diagnosis. But when, on the contrary, the entire history is one which does not direct attention to the heart, and the immediate symptoms are cerebral and neurotic, rather than pulmonary or cardiac, and when even a physical exami-

¹ Read before the New York State Medical Society, February 2, 1887.

nation of the chest shows few, if any, of the familiar or ordinarily recognized signs of organic disease, it is quite possible, and it often happens, that the exact nature of the case is not detected, or the dangers which attend it fully appreciated. It is just because it is so commonly the result of obscure cardiac changes, rather than valvular lesions, that I wish to emphasize its importance, and invite attention to its more careful study.

That the exact condition which I desire to present may be more apparent, I will briefly state the histories of two cases which seem to me, from a clinical aspect, to be typical, although the pathological lesions were essentially different.

CASE I.—Mr. C., aged fifty-four, of sedentary habits, exceedingly temperate, having never been ill a day in his life, came into my house much out of breath, having ridden about a hundred miles in the cars that morning, and having walked quite rapidly from the Forty-second Street Depot (a distance of about half a mile). While waiting a few minutes in my reception-room his difficulty of breathing increased, and, as he attempted to walk across the hall to my consulting-office, I noticed that he staggered. As I took hold of his arm to steady him, the muscles were quite rigid; he was exceedingly pale, and was apparently unable to speak; as I placed him in a chair, a tremor passed over his body, and he immediately sprang up, braced himself against the corner of the mantle, and gasped out "brandy." When this was furnished he swallowed with difficulty; his head was thrown back, his face became deathly pale, with an appealing expression upon it, the surface of his body was covered with a cold sweat, his pulse was feeble and intermittent, at times imperceptible at the wrist. The efforts to breathe became more and more desperate, and as I steadied him—for he would not allow me to place him in a horizontal position—it seemed as if each breath would be his last. In about twenty minutes the paroxysm gradually passed away.

As soon as he was able to talk, he told me that he had had several similar seizures, but none so severe. When he was sufficiently relieved I made a careful examination of his chest. Normal respiration could be heard over the entire chest; both heart sounds were indistinct, and there was an entire absence of normal cardiac rhythm; three or four quick cardiac contractions were followed by a prolonged pause, which was lengthened when he held his breath; no cardiac murmur could be made out.

My diagnosis was degeneration of the ventricular walls, with dilatation of the heart cavities, especially the right.

The patient never entirely recovered from this attack, for after this, slight physical exertion would always bring on more or less severe attacks of dyspnoea; he never, however, had any oedema of the lungs, or of the extremities, and his urine was very albuminous.

A month after I first saw him, one morning, about four o'clock, he suddenly awoke in a paroxysm, and died in a few minutes.

At the post-mortem examination the walls of the right ventricle were found exceedingly thin, at points

almost translucent, readily giving way under pressure. Microscopical sections at different points showed advanced fatty changes in the heart muscles. Both ventricular cavities were dilated, especially the right, and contained large exsanguinated clots, which were so interlaced with the chordæ tendineæ of the tricuspid valves, as to interfere markedly with the blood current. The walls of the left ventricle were pale, but of normal thickness, and showed comparatively little evidence of degeneration; the valves were normal, the lungs were pale and free from disease, the liver and kidneys were engorged, but otherwise healthy.

CASE II.—A physician, aged sixty-eight, of the most abstemious habits, who had never been seriously ill, in December, 1882, had a severe pleuropneumonia on the left side, complicated by pericarditis, from which he slowly recovered. At the expiration of four months from the commencement of his attack, he was able to resume his active professional work, and seemed perfectly well for more than a year after, although there remained the evidence of quite extensive pleuritic thickenings and adhesions at the base of the left lung. He then began to suffer from attacks of paroxysmal dyspnoea, the attacks usually lasting about half an hour. They were usually brought on by physical exertion, mental excitement, or came on immediately after eating.

I saw him in one of these attacks: his face was pale and anxious, his surface cool, his breathing exceedingly difficult, the muscles of the neck and chest being fixed and rigid during inspiration, but he complained of no pain in the chest; his pulse was feeble, intermittent, and, at times, imperceptible.

A physical examination of the chest showed that there was no obstruction to the entrance of air into the lungs, and no sign of pulmonary congestion or oedema. The apex beat could not be felt, and the heart-sounds could not be made out; all was confusion over the præcordial space; no cardiac murmur was heard.

As the attack passed off, the heart-sounds became regular in rhythm and normal in character, except that the first sound was short and valvular.

In two hours after the subsidence of the paroxysm he said that he felt as well as usual, and claimed that it was only an attack of indigestion. I warned him of his danger, and tried to persuade him to give up work and live a quiet life. I prescribed for him, but he said that he did not believe in drugs; he therefore never took my prescription, but went on doing the same work that he had been doing for forty years.

Afterward I occasionally met him in an unprofessional way, and he always expressed himself as feeling well, except that he had to be very careful of his diet, and about going up stairs. One morning, about three o'clock, four or five months after, he awoke gasping for breath, and in a few moments was dead.

A post-mortem examination showed that all the organs of the body were in a normal condition, except his heart and the left pleura; the surfaces of the pericardium were closely agglutinated to each other, and there were firm adhesions between the

left pleura and pericardium; and at the lower third of the left pleura there were firm adhesions and extensive pleuritic thickenings. The heart cavities were distended with blood, showing that death occurred, or the heart stopped, during its diastole. There were no valvular lesions. Both coronary arteries were completely obstructed; in one the obstruction had evidently existed for some time; although the calibre of the other was diminished for an inch or more, it evidently had been pervious until a short time before death, as it was filled by recent thrombus. The aorta was slightly atheromatous. Section of the cardiac walls at different points showed quite extensive interstitial myocarditis, which seemed to be a part of the chronic pericardial changes.

CASE III.—About two months since, I was invited to visit a gentleman, sixty years of age, who was dead when I reached his residence, but whose previous history, as given to me by his physician, was similar to the one just related. In this case death occurred suddenly, immediately after the patient had rapidly ascended two flights of stairs. No post-mortem examination was made.

In studying the pathology of this form of dyspnœa I have found degeneration and thinning of the cardiac walls its most constant lesion; the degenerations in some cases were fatty, in others fibroid; and in one case, which occurred during convalescence from typhoid fever, simple softening. In every instance the degeneration commenced in the right ventricular walls, or was more advanced there than in the left.

Together with the changes in the heart walls in some of my cases, there was atheroma of the aorta and of the aortic valves, accompanied by more or less disease of the coronary arteries. In two instances the coronary arteries were completely obstructed.

Whenever any of these degenerative changes in the cardiac walls has reached an advanced stage, especially if it is associated with extensive atheroma of the aorta, attacks of cardiac dyspnœa may occur from very slight exciting causes.

But it not unfrequently happens that the signs of such cardiac failure may be often repeated without a fatal paroxysm, until some obstacle is developed within the heart cavities to obstruct the passage of blood, and so to embarrass an already feeble heart that it cannot recover itself.

A frequent cause of death, under such circumstances, is the formation of exsanguinated fibrinous masses, which become entwined around the chordæ tendinæ of the tricuspid or mitral valves.

It seems probable, in such cases, that there is time and opportunity during the stasis of blood in the ventricles, which results from the imperfect and feeble ventricular systole occurring at the commencement of an attack, for the formation of cardiac thrombi. As the heart recovers the filaments of fibrin become separated, and interlace themselves with the chordæ tendinæ. The curtains of the valves are thus held in the valvular opening, and there results a complete arrest of the blood current through the heart, which leads to sudden death.

In some instances I have found both the right

auricle and ventricle filled with exsanguinated coagula, which sent prolongations into the pulmonary artery, and obstructed the blood current to the lungs. In one instance, a large pericardial effusion, by its pressure on the heart, arrested cardiac contractions, and thus prevented the passage of blood to the lungs.

I have a specimen where death occurred suddenly on the third day of an acute lobar pneumonia, in which a thrombus entirely filled the cavities of the right auricle and ventricle, the heart being, in other respects, healthy.

In every case of paroxysmal dyspnœa terminating in death, which has come under my observation when I could obtain a post-mortem examination, there was unmistakable evidence of a mechanical arrest of the circulation in the heart, either from failure of its muscular power, or from obstruction to the current of blood through the heart, by fibrinous masses in its cavities.

In the majority of instances the arrest is in the right heart, and, as a result, the blood is shut off from the pulmonary artery; the lungs, under such circumstances, will not only be free from congestion, but bloodless, while the other internal organs will be found intensely congested. If the obstruction is in the left heart, the blood current will be arrested in its passage to the aorta, then the lungs will be intensely engorged, and the other internal organs will contain less than their normal amount of blood.

It seems to me reasonable to believe, that the primary or predisposing cause in all cases of paroxysmal cardiac dyspnœa, is a gradual failure in the organic power of the heart, that the exciting cause of the paroxysm is anything which will lead the heart failure to an entire suspension of the cardiac circulation. Thus when any form of degeneration of the cardiac walls exists, mental shock, excessive physical exertion, violent passion, or sudden fear, may act as an excitant of the paroxysm. These excitants may differ widely from each other, for a feeble heart may be stopped as readily by a call for stronger action which it is not prepared to meet, as by suddenly cutting off its blood supply by obstructing its nutritive vessels.

During the relaxation of the physical forces which comes in the early hours of the morning, after profound sleep, when the heart, in the perfectly healthy state, has its minimum propelling power, is the period in the twenty-four hours when one with degenerated heart-walls is most easily affected. Often such persons will awake about four in the morning in the midst of a paroxysm of dyspnœa. In the two instances which I have related, death occurred almost instantaneously about that time of the day.

A distended stomach from flatulency or any other cause, produces little inconvenience in a healthy person beyond a sense of fullness or slight pain, but in one with a degenerated heart, when a distended stomach presses on the diaphragm, the inspiratory movements become impeded, the pulmonary circulation embarrassed, and the enfeebled heart enters on a struggle for which it has no reserve power, and a more or less severe paroxysm of cardiac dyspnœa is the result.

A fully developed paroxysm usually comes on with a sense of constriction across the chest, which is immediately followed by a struggle for breath, accompanied by spasmodic contractions of the respiratory muscles, the surface of the body becomes pale and cold, the countenance extremely anxious, and the patient, if the paroxysm is not too severe, is constantly changing his position, with the hope of obtaining relief. Painful muscular spasms occur in the voluntary muscles in different parts of the body. The mind remains clear. The pulse is feeble, irregular, and intermittent, and frequently there will be a prolonged absence of the radial impulse. This, as well as other forms of cardiac dyspnœa, presents a peculiarity in the relation of pulse and respiration as distinguished from all other forms of difficult breathing, in that the return of the pulse precedes instead of follows the subsidence of the dyspnœa. In some cases the patient will complain of pain at the lower portion of the sternum, which shoots through the chest to the back.

If death takes place during the paroxysm, the final act is one of persistent muscular contraction, the heart-failure being followed by a tonic spasm of the muscles of the chest, and a rigidity of all the voluntary muscles.

The symptoms which precede an attack, or what may be called its preliminary symptoms, are few, but they are diagnostic. One of the earliest and most constant, and one which may exist for months and perhaps for years before the occurrence of a well-marked paroxysm, is a sinking or exhausted sensation in the præcordial region; this sensation will come on from very slight causes, such as sudden physical exertion, or strong mental emotions. At first a diffusible stimulant, a few swallows of hot water, or a recumbent posture will relieve it.

In some instances the patient will complain of a choking sensation, commencing in the cardiac region, and passing rapidly to the pharynx, which usually comes on immediately after taking food, or at the moment of falling asleep; it is often very oppressive, and to nervous subjects alarming. So-called dyspeptic symptoms will often accompany it. Sooner or later there will be established an irregularity in the cerebral circulation indicated by attacks of vertigo, headache, hissing sounds in the ear, and occasional dimness of sight. For a long time these symptoms may cause the patient no serious inconvenience, but eventually a series of obscure nervous phenomena will develop, he will become irritable, melancholy, and perhaps hypochondriacal, and he will very likely be treated for neurasthenia, or perhaps congestion at the base of the brain. At length attacks of faintness with pallor will occur, and the patient will be troubled with insomnia, his mental faculties will be disturbed, and slight physical exertion, as going up stairs, will cause breathlessness.

In one who presents these symptoms an attack of paroxysmal cardiac dyspnœa is liable to occur at any moment. The physical signs, if the general symptoms are well marked, are usually distinctive; the cardiac impulse is feeble and difficult to locate, there is usually an epigastric tremor, the heart's action is

irregular in force and rhythm, although the patient may not be conscious of its irregularity. The first sound of the heart is short and valvular in character, and during periods of great cardiac irregularity it is difficult to distinguish the first from the second sound.

In the majority of cases there are no cardiac murmurs, and no evidence of valvular insufficiency. There will be an entire absence of any pulmonary disease adequate to produce the general symptoms, and an examination of the urine will usually give negative results. These patients will become exceedingly anxious about themselves, and will consult one physician after another, without obtaining anything more than temporary relief.

When a well-defined paroxysm has once occurred, little can be done to avert a fatal issue, but much may be done to delay the occurrence of the first paroxysm, or rather to arrest the degenerative changes in the heart-wall, and prevent the sudden dilatation of its cavities which so often leads to the first paroxysm. This must be accomplished mainly by a restricted diet, and by a carefully regulated life. There is perhaps nothing which so certainly induces the degenerative changes in the cardiac muscles, that allows of sudden dilatation of its cavities, as the daily intemperate use of alcohol; it is evident in such cases that its intemperate use must be stopped, but never suddenly or entirely, for a moderate amount of alcohol is essential to the nutritive processes in a chronic alcoholic subject.

In all cases the diet should be restricted to milk, meat, and a small amount of bread; sugars and starches should be avoided and the quantity of food taken at any one time should be limited. Flannel should be worn next the skin, and the surface of the body should never become chilled. Each day should be divided into eight hours for sleep, eight hours for labor, and eight hours for rest and refreshment, and this division should be strictly adhered to. In other words, the entire life of the individual should be carefully regulated. Next to diet, the most important thing is systematic daily exercise in the open air; the exercise should never be violent or carried to fatigue; commencing in a moderate way, it should be daily increased until the individual is able to take long walks without fatigue, avoiding elevations and going up stairs.

The medical treatment resolves itself into alkalies as eliminatives; the different preparations of iron as tonics, in combination with which small doses of digitalis should be given, five or ten drops of the tincture twice a day. In alcoholic subjects strychnine should be combined with the iron. All of these drugs should be given in such small doses that their use may be continued for a long time.

The first thing in the management of a paroxysm is to give the patient plenty of fresh air, the second is to keep him in a semi-recumbent posture, the third to apply artificial heat to the surface of the body. The only two medicinal agents which I have found to have any positive control over a paroxysm are the nitrite of amyl and nitroglycerine. After one paroxysm has occurred nitroglycerine should be given whenever the premonitory symptoms of

an attack are present. During a paroxysm nitrite of amyl carefully administered will give at least temporary relief. I have patients who carry pearls of the nitrite of amyl constantly with them, which they use to ward off impending attacks.

THE PHYSIOLOGICAL ACTION OF SPIGELIA, OR PINKROOT.

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NOTWITHSTANDING the fact that several writers have described this drug from a clinical standpoint, no one, so far as I am aware, has ever studied its physiological action.

In the human being the drug is said to produce symptoms closely resembling those produced by any of the mydriatics, such as flushing of the face, dryness of the skin, and talkative delirium. Only two cases of fatal poisoning in man have ever been reported, and these have passed from text-book to text-book till the original report has been lost.

When as much as three ounces of the fluid extract of spigelia is given by the stomach to a large dog weighing forty pounds, the following symptoms appear: Almost immediately after the ingestion of the dose the animal has short and quick expiratory movements, amounting almost to a cough; soon after the pupils become widely dilated, and at the same time very marked internal strabismus asserts itself; the eyes becoming fixed in this position so that they cannot follow any object, such as a pencil, when it is passed from side to side. Constant retching, with no result, now comes on, the animal standing, and apparently suffering from no sensory or motor palsy. There is no change in gait. Soon after this marked exophthalmia develops itself. The retching having lasted about five minutes, now passes off, and at this time signs of muscular weakness and lack of co-ordination appear; the walk becomes staggering in both fore and hind legs. The respirations now become very rapid, resembling those of a dog after a long, hot run, the tongue hangs from the mouth and is dry and red, and the nose is hot and no longer moist. Muscular power is progressively lost, so that the dog frequently falls when endeavoring to walk, but sensation does not seem to be affected. About this period the animal lies down and passes into deep sleep, which in turn soon passes into coma, and death follows without any movement being made, evidently from a general failure of vital force. The respirations, as death approaches, become slow, and are finally extinguished simultaneously with cardiac arrest.

In the frog the same symptoms occur as in the higher animal, including the marked exophthalmia and to a less degree the strabismus. The fixation of the eyeball is extreme, and it feels to the finger like a hard knob, which the lid cannot cover. Muscular weakness with dropping of the jaw comes on, and motor power is constantly decreased, until the batrachian lies relaxed and powerless. That the action of the drug in thus destroying motor power

is spinal, was proved by the following experiments: If the hind legs are protected from the poison by ligation of the abdominal aorta, the palsy is as great as under ordinary circumstances, and reflexes are totally abolished. Further, if the spinal cord be directly galvanized no movements occur in the hind legs; and, lastly, if strychnia be injected into the body, even in large amount, its action is not only slight, but occurs after the lapse of many minutes. That the drug has no action on the motor nerves is proved by the fact that when the poison reaches the efferent nerves, either through the circulation, or when directly applied, galvanization of the nerve trunks causes normal contractions in the tributary muscles, and the sensory nerves likewise escape, for if the drug be applied directly to the nerve and the foot irritated, signs of pain are elicited, and reflex movements occur. Further than this, if the vein in the leg be tied, and the drug injected into the limb, thus protecting the spinal cord, reflexes occur on irritation of the drugged foot.

That the palsy is not cerebral is proved by the fact that movements of muscles supplied by the cranial nerves continue long after the movements in the legs have ceased, and by the other experiments already detailed.

The action of the drug on the circulation is as marked as its effects on the nervous system, and on the cardiac muscle it acts as a direct depressant poison, for if it be injected into the jugular vein in such a way as to come suddenly in direct contact with the heart the movements of that viscus almost instantly cease. Further than this, if the excised heart of the frog is dropped into a strong solution of the drug its movements are almost immediately stopped in a condition of diastolic arrest, although the relaxation is not very marked. When a frog receives as much as twenty minims of the extract of spigelia the heart is slowed to a considerable extent, as much as ten or fifteen beats per minute, and diastole, while not increased in length, is nevertheless very full and marked. The change from systole to diastole is abnormally rapid, so that the heart in one moment in systole springs with a quick movement to its full diastolic condition. Systole, however, gradually increases on diastole, in much the same manner as in digitalis poisoning, until finally the greater portion of the ventricle fails to dilate, the apex being tilted more and more forward while the ventricular walls are powerfully contracted. As the systolic pauses increase, the diastolic movements decrease in volume, until finally the heart dilates no more than it does normally. At this time the powerful and heretofore spreading systolic contractions seem to lose power and the heart shortly stops all movement in a semi-relaxed state. Experiments on the warm-blooded animal show that on the injection of one drachm, or less, of the drug the action of the heart is very rapidly slowed in its movements, and that this slowing is chiefly due to central inhibitory stimulation is shown by the fact that if the vagi be cut before the drug is given this slowing does not occur, and also if after the drug has slowed the heart the vagi be cut the inhibition no longer remains. That the fall of arterial pressure produced

by this drug is due in great part to the cardiac depression which it produces is proved, since asphyxia will cause a rise in pressure, and that the pressure returns nearly to normal as soon as the heart gets rid of the drug which has been suddenly injected into it. On the respiratory centre the drug seems to have a still more depressing influence, respiration ceasing some moments before the cardiac arrest.

These experiments were repeated again and again in order to avoid erroneous conclusions. The extract used was prepared by Milton Campbell, druggist, Twenty-first and Pine Streets, of this city.

BACTERIOLOGICAL NOTES.

By GEORGE M. STERNBERG, M.D.,
MAJOR AND SURGEON, U. S. ARMY.

The Bacillus of Glanders. (Bacillus Mallei.)

The researches of Löffler and Schütz,¹ published in 1882, established in a definite manner the etiological relation of the minute bacillus found by them in the diseased tissues of infected animals, to the disease known in this country as glanders, Ger. *Rotskrankheit*, Fr. *Morve*. This has been confirmed by the independent researches of Israel,² by the subsequent experiments of Weichselbaum,³ and of Kitt,⁴ and by the more recent investigations of Löffler.⁵ All of the observers named agree in describing this bacillus as a slender rod, somewhat resembling the tubercle bacillus, but of more uniform size and somewhat broader.

According to Flüge,⁶ in stained preparations the rods usually appear to be made up of dark and bright portions, which under a low power give the impression of a chain of cocci. Flüge supposes that the bright, unstained portions of the rods represent spores. Löffler has not been able to convince himself of the presence of spores, although he has found that development may occur after three months from bacilli which have been kept in a desiccated condition. The same author has found that exposure to a temperature of 55° C. (131° F.) for ten minutes is sufficient to kill the bacilli. This fact is opposed to the view that the bright spaces in the rods are spores, as Flüge has inferred. According to Weichselbaum, the Rotz bacillus forms spores. Evidently this is a question which cannot yet be considered definitely settled.

The bacilli are endowed with active movements (Eisenberg), and grow readily in a variety of culture-media—on blood-serum of the horse or sheep (not so well on that of the ox), on agar-agar, and flesh-peptone-gelatine, and in neutralized infusions of the flesh of the horse, the sheep, the ox, the rabbit, the dog, etc. Cooked potato furnishes an especially favorable soil upon which to cultivate the bacillus of glanders. Growth occurs upon these in

two or three days at a temperature of 37° C., in the form of a thin, brownish, slimy layer. According to Weichselbaum and Kitt, growth also occurs, although very slowly, at the room-temperature (25° C.).

Upon blood-serum, at 37°, growth occurs in three days, in the form of numerous little transparent drops scattered about on the surface (Eisenberg).

The bacilli are best stained with a concentrated alkaline solution of methylene-blue in water. For staining the bacilli in sections of tissue containing them Löffler recommends that they be immersed in the above-mentioned solution for twelve to twenty-four hours, and then carefully treated with very dilute acetic acid, until the sections have been decolorized sufficiently to bring the bacilli into view. After this treatment they should be washed out in alcohol, and immersed in oil of cedar, which does not dissolve out the aniline colors, and is therefore to be preferred to oil of cloves in all preparations in which these colors are used for staining bacteria.

According to Cornil and Bakes, the bacilli of glanders differ from the bacilli of tuberculosis in the fact that they are not stained by Ehrlich's method, and that when stained with an aniline color they are decolorized when treated with nitric acid. Löffler first obtained cultures of the bacillus, which he had previously recognized in the characteristic nodules of an infected animal, by placing small bits of lymph-glands, spleen, liver, and lung tissue, in a variety of fluid media, and upon blood-serum of the horse and of the sheep. At the end of three days, during which time the cultures were kept in the incubator at 38° C., development had occurred in the various fluid media, and upon the jellified blood-serum, in the form of small transparent droplets, having a yellowish color. A series of pure cultures, made from this source, was subsequently tested upon various animals. Two horses, inoculated respectively with the eighth and tenth generation of the bacillus, developed unmistakable glanders; one died, and the other was killed. In both the characteristic lesions were found, and the presence of the bacillus was demonstrated in the diseased tissues and lymphatic glands, by microscopical examination, and by culture experiments.

Further experiments upon animals showed that the guinea-pig, and the field mouse, are the most easily infected by inoculations with pure cultures; that the rabbit is somewhat less susceptible; and that there are decided differences in the resisting power of different individuals. While the field mouse is extremely susceptible, the house mouse and the white mouse are almost insusceptible. The same is true of the white rat, which seems to be immune from most of the infectious diseases which have been studied experimentally. The ass and the sheep are susceptible. Among birds the pigeon alone exhibited some degree of susceptibility.

Löffler insists that in a suspected case of glanders in man, the diagnosis can be established without difficulty by a demonstration of the presence of the bacillus. This is easily accomplished by ob-

¹ Deutsche med. Wochenschrift, 1882, No. 52.

² Berl. klin. Wochenschr., 1883, No. 11.

³ Zur Ätiologie der Rotzkrankheit des Menschen, Wiener med. Wochenschr., 1885, 21-24.

⁴ Versuche über d. Züchtung des Rotzpilzes. Jahresber. d. München. Thierarznei-Sch., 1883-4.

⁵ Die Ätiologie der Rotzkrankheit. Arbeiten d. Kaiserl. Gesundheitsamts., Bd. I. Hft. 5.

⁶ Die Mikroorganismen, 2d ed., p. 223.

taining, with proper precautions, the contents of an unopened abscess or pustule, and planting a little of the same upon blood-serum in several test-tubes, and also upon slices of cooked potato. A number of cover-glass preparations should also be made, and stained with methylene-blue. In the course of a few days the characteristic transparent, yellowish droplets will appear upon the blood-serum, and upon the slices of potato a honey-yellow layer will be seen. From these cultures one or more mice or guinea-pigs may be inoculated, in order to confirm the diagnosis. It is not an easy matter to isolate bacilli from the nasal discharge of a suspected animal by means of the plate method. In this case it is simpler to test the question of the presence of the bacillus and the nature of the disease, by inoculating a guinea-pig. Two or three days after inoculation an abscess forms at the point of inoculation, and soon the nearest lymphatic glands become swollen. According to Flüge, when only a small quantity of material has been injected subcutaneously, the process may remain stationary for weeks; otherwise, acute nodular swellings occur in the testicles, or ovaries, upon the vulva or feet, and an ulcerative process is established in the nasal cavity.

Löffler says that infection may occur in animals through a superficial wound, or through the digestive or respiratory tract. The bacilli, apparently, cannot penetrate through the uninjured skin or mucous membrane. Numerous experiments have shown that pus from the nostrils of an animal suffering from glanders, may be introduced into the nasal cavity of a healthy horse, upon cotton wadding, or by means of a brush, without result.

An animal suffering from glanders may give birth to young which have become infected *in utero*. This has been observed in the case of the horse, and Löffler relates an interesting case in which the fact was verified by an experiment upon the guinea-pig. One of these animals was inoculated with material taken from a glanders nodule in the lung of another. A chancre ulcer developed at the point of inoculation, the glands in the vicinity became swollen, and swelling of the left foot occurred. All of these appearances disappeared, and at the end of five months the animal gave birth to a young one, which was apparently healthy, but died four weeks after birth. A post-mortem examination demonstrated the presence of glanders nodules in the liver, the spleen, and the lungs; not, however, in great numbers. Infection after birth is excluded, from the fact that there was no external evidence of glanders. The nasal cavity was healthy, and the lymphatic glands were not swollen.

CASE OF PYELONEPHRITIS DEPENDENT UPON RENAL CALCULUS.

BY EDWARD T. BRUEN, M.D.,

ASSISTANT PROFESSOR OF PHYSICAL DIAGNOSIS IN THE UNIVERSITY OF PENNSYLVANIA.

I HAVE brought forward the history of the single case which forms the basis of this paper on account of its intrinsic interest from the standpoint of

diagnosis, and the rare character of the specimen obtained at the post-mortem examination.

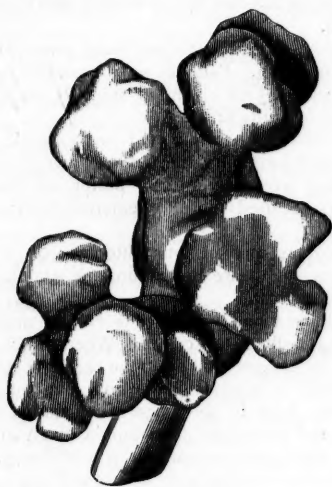
The patient, Catharine W., aet. forty, was admitted to the Philadelphia Hospital, March 24, 1886. Family history excellent; she has always enjoyed good health until eight years ago, when she first felt pain in the left lumbar region with frequent and painful micturition. These symptoms would vanish at times, but would appear at intervals. In July, eight months prior to the date of admission, she awoke one morning with a violent pain in the left side, which radiated from her back through the abdomen. It was also transmitted down the left limb, and was increased when she straightened the left leg—giving her the impression that she had hip disease. There was also some fever. After this attack she recovered sufficiently to attend to her ordinary duties, but at intervals the pain, with fever, returned, continuing for a week at a time—and the pain in the hip was often sufficient to make her desire to lie with the thigh flexed on the abdomen and the leg on the thigh.

In January of last year, three months before admission to the hospital, she had a severe attack of pain, accompanied by vomiting. From this time she progressively lost flesh and strength. When admitted, March 24, 1886, she complained of a dull aching pain in the splenic region with tenderness on palpation over the lumbar, and also left ovarian region. The most sensitive point was midway between the spine of the ilium, and along the border of the ribs. Between the lower ribs on the left side, nearly down to the crest of the ilium there was an area of dulness, which extended anteriorly to a point corresponding with a line drawn from the anterior superior spinous process of the ilium, to the edge of the ribs. The dulness did not extend downward more than three or four fingers breadth below the edge of the ribs and was masked by the intestinal resonance. She passed usually only a little over eighteen ounces of urine a day, and nearly half was pus.

Her general appearance was anæmic and nervous. The temperature was constantly above 99°, the evening temperature being 1° higher. The general condition continued unchanged during the period of three months which she passed in the ward. Death supervened through exhaustion, June 5, 1886.

The post-mortem examination was made twenty-four hours later. The body was emaciated, with but little cadaveric rigidity. On opening the abdominal cavity, the small intestine was found bound down to the uterus and fascia of the pelvis by strong adhesions. A large tumor was situated in the left lumbar region, extending from the rim of the pelvis along the psoas muscle close to the vertebrae. It was about seven inches long and three and a half broad—the upper border of the tumor corresponded with a plane drawn across the body at the tenth rib in a line with the angle of the left scapula. In the anterior axillary region a plane drawn across the body just below the tenth rib would have traversed the bulk of the tumor at its upper portion. On opening the tumor it was found to contain over thirteen ounces of pus. The sup-

purating sac represented the capsule and pelvis of the kidney, all vestiges of renal tissue having undergone cystic degeneration; the ureter was patulous down to the bladder—its walls were very much thickened. The tumor sac contained a large cal-



culous mass which weighed fourteen drachms, and presented a branched appearance like a piece of coral, each branch doubtless representing as many renal calices. The main portion of the stone probably formed in the pelvis of the kidney, and one long branch descended in the direction of the ureter. There were also a few fragments of a similar character, but the bulk of the stone was one mass. The stone was chiefly composed of oxalate of lime, partially coated with a phosphatic deposit. The bladder was normal, as was the uterus, but both ovaries were occupied by small collections of pus. The left ovary was firmly adherent to the ureter of the same side. A cheesy mass was also discovered in the right broad ligament. The cortical portion of the right kidney was enlarged and fatty—the ureter was normal. The liver presented an anæmic and fatty appearance, weighing three pounds. The pancreas was somewhat enlarged. The case presents several suggestive features.

1. The initial pain, eight years before admission to the hospital, doubtless indicated the commencement of the process, and yet for only eight months were the symptoms sufficiently aggravating to compel her to appeal for medical assistance. While she was under observation the pain was not a prominent symptom, nor had it been in the past. It was mostly a dull sense of weight or uneasiness. She had never had pain characteristic of renal colic, nor blood in the urine. The history of this symptom of pain in this case corresponds with that of many cases of renal calculus. That is, in many instances the pain is not a sufficiently conspicuous characteristic of the condition to be a diagnostic feature. On the other hand, cases of suppurative nephritis of a tuberculous character have been reported in which the symp-

toms of pain and vesical irritation were so prominent as strongly to point to calculus and the tubercular character of the process could not have been established without the assistance of an examination for the tubercle bacillus.¹ The constant sense of pain and discomfort began in C. W.'s case about eight months before her admission to the hospital, and probably coincided with the commencement of suppuration. A case is reported by J. A. MacDonald,² in which the development of the symptoms resembles the present case so closely as to be well worthy of comparison. The appearance of the calculous mass is identical, only the process was bilateral. There were two masses of stone, one in the pelvis of each kidney. A still more remarkable feature is that in MacDonald's case the kidney substance was normal, nor was there even pyelitis. A consideration of this example supports the theory that in the case of C. W., the development of pyelitis was a late complication.

2. Since in this class of cases there is often an absence of characteristic symptoms, the diagnosis must be by exclusion, and in the present case the inferential evidence in favor of calculus was very strong. It was assumed that there had been no primary disease of the bladder. The reaction of the urine was acid—there was no deposit of vesical epithelium, nor was there pain or tenderness over the hypogastrium. On the contrary, the history of dull pain in the lumbar region, latterly with pain in the hips, with the tendency to retain the left leg flexed on the thigh, was highly significant of morbid process in the renal region. The position of the left limb was probably due to implication by pressure of branches of the lumbar plexus. The symptom is most marked in cases of perinephric abscess with implication of the psoas muscle. There had been no history of traumatism, one of the causes of renal suppuration, and the remaining antecedent of suppurative pyelonephritis, viz., tubercle, was excluded in this case by the absence of the tubercle bacilli from the pus,³ and by the absence of any evidence of tuberculous disease in the other organs of the body.

It was therefore considered highly probable that a calculus was the primary cause of the process. The physical signs yielded by percussion and palpation, of tumor in the lumbar region, could not, of course, indicate the etiology of the suppurative process.

3. The indications for treatment in this and similar cases seem to be confined to operative interference. Internal medication cannot influence the seat of pus formation, or only to a small extent. The free drainage in the case of C. W., as in most cases of calculous pyelitis, showed that aspiration was not likely to be beneficial.

If an incision over the left renal region had been practised in the earlier stages of the process, a correct diagnosis of the condition could have been reached, and the stone removed—with or without

¹ THE MED. NEWS, Dec. 4, 1886. Case of tuberculous suppurative nephritis. Shepherd, of Montreal.

² Canada Med. and Surg. Journal, vol. xii.

³ Examination kindly made by Dr. Crozier Griffith.

removal of the kidney. Unfortunately, at the time the patient came under our observation it was evident that her strength was insufficient to render operative measures justifiable.

At the post-mortem examination it was observed that the more superficial part of the tumor and the largest collection of pus presented between the tenth and eleventh ribs, just back of the posterior axillary line. The calculus mass, by filling up the lower part of the tumor, formed an obstruction which favored the accumulation of pus in an upward direction. Aspiration directly over this point would have involved the penetration of the diaphragm, so that the only point from which it would have been feasible to reach the collection of pus by aspiration would have been below the twelfth rib in an upward direction, but in carrying out this procedure the needle would have probably impinged against the stone, and the sac containing the bulk of the pus would not have been entered. Aspiration was indeed attempted in C. W.'s case as a tentative measure, and the needle was introduced as indicated, but with a negative result.

HOSPITAL NOTES.

TREATMENT OF PNEUMONIA IN THE NEW YORK HOSPITALS.

BELLEVUE HOSPITAL.

IMMEDIATELY upon admission every patient under the charge of PROF. ALFRED L. LOOMIS undergoes an examination for the determination of the following points:

1. The extent and location of pulmonary consolidation and amount of complicating pleurisy.
2. The temperature and condition of the heart as indicated by its rhythm, force, and amount of muscular element in the first sound.
3. The condition of the kidneys.

When the patient is admitted during the initial shock, full doses of morphia are administered hypodermatically, and repeated with sufficient frequency to relieve pain, during the first three or four days, or until the consolidation is complete.

Every patient is placed in bed, clothed in an oil-silk, flannel-lined jacket, which is made to come close up around the neck and to extend well down on to the trunk, and is put upon a diet of milk, vichy, chicken soup, and beef-tea, the selection of food being somewhat affected by the limits of hospital dietary. This much is routine.

When consolidation is confined to a lower lobe, the cough, expectoration, and pain moderate, the temperature below 104° F., while the pulse is regular with a strong first sound of the heart, and the urine is normal, nothing further is done beyond keeping the bowels freely open by some mild cathartic, as pulv. glyc. co.

The general treatment is then purely expectant. The temperature and pulse, however, are taken every four hours and the urine examined daily.

When the temperature reaches 104° F., or more, fifteen to twenty grains of quinine are given at a single dose. If at the end of six hours no reduction of temperature is produced, twenty grains are given in divided doses within

an hour. As the drug used is "hospital quinine," these doses are possibly slightly larger than would be required in general practice. When they fail to reduce temperature equal parts of quinine and antipyrin are employed, but always in combination with some form of cardiac stimulant, as alcohol or caffeine. If the temperature is not affected by the second dose its use is not continued.

Indications for stimulants are found principally in the cardiac condition. Patients with consolidation at the apex, however, and alcoholic subjects are put upon stimulants from the first.

The cardiac stimulants used are alcohol, caffeine, digitalis, and ammonia, the first two being given with about equal frequency and for prolonged effect, while the others are used more for emergencies in the later stages.

An irregular, uneven, intermittent pulse, or weak or absent first sound are indications for stimulants to be given p. r. n.

It is seldom found necessary to employ measures directed especially to the cough. When this is distressing, with little expectoration in the earlier stages, opium is employed to mitigate its severity but not to check it entirely; later in the stage of resolution opium is avoided and carbonate of ammonia given in connection with infusion of serpentaria or wild cherry.

Pain is controlled early by opium and *large hot* poultices, later by poultices alone, if possible.

The earliest indications of renal complications are met by the ethers, infusion of digitalis, and nitroglycerine.

Sleeplessness is relieved by bromide and chloral (alone in robust patients), and with the addition of cardiac stimulants in alcoholic subjects.

Edema is treated by dry cups freely applied over the entire chest, atropia hypodermatically, whiskey and digitalis internally, and the free inhalation of oxygen.

ST. LUKE'S HOSPITAL.

The treatment of pneumonia in 'DR. KINNICUTT'S wards in St. Luke's Hospital, during the past five years, has been wholly an expectant one. Absolute rest in bed in a *strictly* horizontal position, not only until defervescence occurs, but for several subsequent days, is a rule which is carefully observed in his service. The patients are rarely permitted to assume a sitting posture, even for the purpose of an examination. Several instances of sudden death from heart failure, in the period immediately following defervescence, on the patient attempting to rise, have convinced him of the wisdom of a routine rule of this kind. Light flaxseed poultices or a layer of cotton-wool covered with oiled silk, applied over the affected area, have been found serviceable in promoting the comfort of the patient.

During the developing stage of the pneumonic process (the first three or four days), opium in small doses (morphine one-sixteenth to one-eighth grain given by the mouth or hypodermatically, two or three times in twenty-four hours) has proved of great service in controlling the symptoms of nervous shock which so frequently obtain at this stage of the disease, and in affording relief to the suffering of the patient. It has also seemed to combat, in a measure, the tendency to heart failure.

The employment of alcohol has been governed by the symptoms in individual cases. With the first indication of cardiac weakness, it has been the rule to institute its use in small doses and to watch carefully its effect. The pulse, the tongue, and the mental condition are accepted as guides for its continued use and for the amount to be given. Many cases have convalesced satisfactorily without its employment at any stage of the disease; again, twelve or more ounces of brandy have been given in the twenty-four hours, with marked benefit and recovery. Its use in diminished doses during the first days of convalescence has often been found advisable.

Caffeine and digitalis have been used very uniformly as heart tonics, and Dr. Kinnicutt believes with benefit. During the past several months, strophanthus, in the form of the tincture (five drops, three or four times in the twenty-four hours), has been employed with excellent results. He now prefers it to all other cardiac tonics in this disease. Antipyretics have seldom been employed.

On the temperature reaching 105°, a single small dose of antipyrine, eight to twelve grains by the rectum, has been given and repeated if necessary.

Aside from his disbelief in the necessity of the general use of antipyretics in pneumonia, Dr. Kinnicutt is convinced of the intolerance of large doses of the group of carbon compounds in this disease.

Finally, the alimentation of the patient has received very careful attention; the food has consisted of milk, in its raw state, or peptonized. The hospital records show the following satisfactory results under the above method of treatment.

Forty cases of acute lobar pneumonia were treated in the wards from December 1, 1884, to December 1, 1886. There were six deaths, 15 per cent. (excluding one which fairly should be disregarded, death occurring twelve hours after admission to hospital on the fifth day of the disease), all in complicated cases; the complications being: (1) amyloid spleen, liver, and acute nephritis; (2) chronic nephritis; (3) endocardial aneurism, mitral stenosis, chronic nephritis; (4) alcoholism; (5) urethral stricture with retention of urine; (6) uræmia and chronic nephritis. Serious complications existed in ten of the cases which recovered. Double pneumonia was present in three of these.

If the nature of the symptoms points strongly toward the development of pneumonia, although it is not yet perfectly evident, Dr. BEVERLEY ROBINSON avoids the use of arterial sedatives like aconite, and prefers to order a few doses of ammonia, a small amount of opium (Dover's powder preferably), and a flaxseed poultice over the affected side. When the pneumonia can be clearly recognized by physical exploration of the lungs, moderate doses of digitalis (fl. extr. $\mathfrak{m}\mathfrak{j}$), and from two to four ounces of brandy or whiskey in the twenty-four hours, are prescribed.

A sufficient quantity of milk given regularly every hour, with an egg-nog, or beef extract, morning and evening, is allowed. Flaxseed poultices, containing a small proportion of mustard, are continued as a local application, and are renewed once every three hours. To retain their heat and moisture, they are covered externally with gutta-percha tissue or oiled silk.

If the bowels are constipated at the beginning of the attack, or subsequently, a dose of calomel is ordered (5 grs.), followed in a few hours by a saline aperient (\mathfrak{z} ss- $\mathfrak{z}\mathfrak{j}$ of Epsom salts). Whenever the patient is much prostrated, and the bowels remain torpid, a laxative enema is preferred. In cases where the bodily temperature rises above 103° Fah. in the axilla, five to ten grains of the sulphate of quinine by the mouth, every four hours, during the continuance of the period of relative hyperpyrexia, are ordered. Whenever the heart shows symptoms of failure, either by extreme frequency, weakness, or irregularity of its beats, the amount of brandy or whiskey to be given is rapidly increased, and strong, black coffee is also ordered.

In a very grave case of double pneumonia treated during the past winter, and in which a cure followed, the disease was combated during the acute stage almost entirely with brandy and black coffee, a half ounce of one or the other being given alternately every half hour. (The brandy should be old and pure.) Later, dry champagne was substituted for the brandy.

Some years ago, Kermes mineral (oxysulphuret of antimony) in a vehicle of syrup of gum with water, was frequently ordered by Dr. Robinson every two or three hours, in order to promote expectoration. Although excellent results were obtained from the use of this drug, for no sufficient reasons it was abandoned, and never since resumed.

If the heart action remains feeble during the stage of resolution, although the fever has disappeared during several days, he has found convallaria majalis an excellent substitute for digitalis. It agrees with the stomach better than the latter drug, and often acts quite as well as a heart tonic.

In the convalescent period, when the lung remains impervious to air during a considerable time, he has found repeated fly-blisters over the affected side extremely beneficial in clearing up the local intra-pulmonary condition. At the same time that blisters are applied, he orders small doses of belladonna, strychnine, and carbonate of ammonium in infusion of cinchona, repeated several times daily, so as to strengthen the heart's action, and tone up the general system. Whenever delirium is present, it is allayed with the ice-bag to the head, or by the internal use of ether (in perles), or of the bromides. Venesection for the asphyxia accompanying a dilated and over-burdened right heart, is occasionally advisable, and when performed under favorable circumstances, has been found useful. In his experience, however, the evident indications for this little operation have rarely occurred. The main source of danger in pneumonia, as a rule, seems to pertain to rapid or sudden heart failure. This accident may be prevented in many instances by the internal administration of repeated and considerable doses of black coffee and alcoholic stimulants.

MEDICAL PROGRESS.

THE IODOL TREATMENT OF LARYNGEAL TUBERCULOSIS.—LUBLINSKI is quoted as follows in the *Journal of Laryngology* for February, 1887:

Iodol is scarcely soluble in water, but is dissolved by alcohol and ether. Schmidt proposed a mixture of iodol,

1 part; alcohol, 16 parts; glycerine, 34 parts. This is, however, too weak. Lublinski has used the powder pure for laryngeal insufflation. It causes no pain or cough, and it remains a long time in contact with the surface. The author has used it in the treatment of fifteen cases of tuberculosis. He administered one insufflation daily, or, in some cases, two or three times a week. Under its influence ulceration quickly heals, the base becoming clean and granulating, dysphagia disappears, and the patient's health improves. Tannin, boric acid, lactic acid, and other applications will produce this effect, but not so rapidly as iodoform, the action of which is striking. The author gives details of two cases of tuberculosis in particular, in which iodoform produced rapid curative effects. In both there was extensive ulceration. The author also regards iodoform as serviceable in ozæna and scrofulous rhinitis, with ulcers on the septum.

IS IODOFORM ANTISEPTIC?—The widespread employment of iodoform as an antiseptic dressing may receive a check should the conclusions arrived at by MM. Heyn and Rovsing, of Copenhagen, be confirmed. These observers have (*Fortschritte der Medicin*, 1887, No. 2) been making experiments with iodoform to test its value as an antiseptic, which they point out is so generally accepted that the surgeon does not hesitate to employ a non-sterilized spatula or to insufflate ordinary air with the powder, procedures which he would shrink from employing were it not for the belief that the iodoform can destroy the germs adhering to the one or suspended in the other. Yet as iodoform is rarely used to the exclusion of other antiseptics (as carbolic acid or mercuric chloride), there is never much opportunity, clinically, of testing its germicidal properties. Mikulicz, in 1881, tested the action of iodoform upon putrefaction, but with no definite result; and Rummo's experiments in 1883 were complicated by his use of oil of turpentine as a solvent for the iodoform. Meyer found in one case of abscess that iodoform had no effect in reducing the virulence of the pus, and in another that it had a slight action. The results of the research pursued by MM. Heyn and Rovsing surprised themselves. Acting on the theory that it is through liberation of free iodine that iodoform enjoys its germicidal reputation, they prepared solutions of iodoform in olive oil and in serum, and, having sterilized them, mixed them with culture media, and studied the effect of cultures of various bacterial organisms in these mixtures, as well as under iodoform powder alone. They also experimented on rabbits by mixing inoculation fluids with iodoform. The details of the experiments need not be reproduced here; suffice it to say that in no case did the presence of the substance interfere with the development of micro-organisms. So that they conclude that as an antiseptic its employment in surgery is valueless. But, more than this, its use is dangerous, for, as two of their experiments proved, iodoform itself may contain pathogenic micro-organisms; and even if all care be taken to purify it, yet it may become the medium of the conveyance of pathogenic germs introduced into it through the spray or spatula. We trust that these experiments, which have received such prominence, will be repeated, for, if confirmed, we can imagine that the use of iodoform (apart from any other antiseptic) would in certain circumstances be serious. It would be deplorable if in

any such case the material upon which the surgeon relies to protect his patient from bacterial invasion should prove to be the means whereby such invasion occurred. The writers of the article themselves advise that before using iodoform (which is valuable as a dressing on other grounds than as an antiseptic only), it should be disinfected in sublimate solution.—*Lancet*, Feb. 12, 1887.

A DOMESTIC NIPPLE-SHIELD.—DR. FRANK HOLYOKE states in the *Boston Medical and Surgical Journal*, Feb. 24, 1887, that a patient who suffered from extremely sensitive fissured nipples, invented for herself most perfect nipple-shields, by suspending from a ribbon about the neck, two deep, wire tea-strainers. They were held in place by a properly-fitting waist, and the nipples, thus covered, were entirely free from any irritation. She had, moreover, such a copious supply of milk, that it was otherwise quite impossible to keep the nipples dry. This was remedied by the ready passage of the milk through the wire gauze to a layer of absorbent cotton covering the tea-strainer. Not until she began to employ this method of protecting the nipples did the process of healing go on satisfactorily.

This young mother's clever device has been a source of great comfort in a number of similar cases which have since then come under Holyoke's care.

TREATMENT OF CYSTITIS.—RELIQUET recommends the following: Morning and evening a general bath of tepid water. An hour after the bath the following suppository should be introduced in the rectum:

Iodoform	gr. jss.
Ext. hyoscyami	gr. j.
Olei theobromæ	gr. xlv.

When urethral discharge exists this pill should be taken morning and night:

Terpine	gr. jss.
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divided into ten pills.—*Les Nouveaux Remèdes*, February, 1887.

KNIFE WOUND OF THE LIVER; RECOVERY.—BURCKHARDT, of Stuttgart, reports in the *Centralblatt für Chirurgie*, No. 5, 1887, the following interesting case:

A laborer, aged twenty-seven, was admitted to the hospital, having received, one hour previous, while upon the street, a penetrating wound of the abdomen. The knife which inflicted this wound was of the kind used by butchers, its blade being one and a quarter inches wide and three and a half inches long.

On examination, the patient was found to have the appearances of ordinarily good health; he was conscious; pallid; pulse thready, 140; respiration costal; he complained of severe pain in the abdomen and left shoulder, and was greatly terrified. In the left mammary line there was a sharply cut wound, one inch long, whose edges had been united with two stitches. The abdomen was somewhat distended, percussion note dulled; from the upper portion to the lower border of the fifth rib on both sides the percussion was tympanitic. The patient's clothing was plentifully blood-stained; his general condition pointed to continuing severe hemorrhage, which, in the opinion of the surgeon, made operative interference imperative. The patient was anesthetized, and the wound enlarged; the cartilages

of the ninth and tenth ribs on the left side were clearly cut obliquely, and on following the wound inward and backward it gaped, and on pressure a considerable quantity of dark blood escaped. The abdominal walls were immediately separated at their wounded edges between five and six inches, and the loop of intestine which lay nearest the wound, and was immersed in blood, was brought out and examined for the point of hemorrhage. The location of the wound pointed to an injury to a large artery of the stomach or mesentery, rather than to an injury of the liver, as the source of bleeding. When no such arterial wound was found, the liver was examined, and an incised wound, about one and a quarter inches long, was found in the left lobe, from which dark blood was escaping, as from a cavernous angioma. The index finger penetrated the liver toward the right and posteriorly from two to two and a half inches. The collapse of the patient forbade further exploration. The liver wound was accordingly tamponed with a strip of iodoform gauze of convenient width, and about four inches of gauze were allowed to protrude from the orifice of the abdominal wound. The loop of intestine which had been handled was washed with sublimate solution, replaced, and the abdominal wound, excepting its upper angle, was closed. At this upper angle were left the protruding gauze, and a large drainage tube, which extended to the upper surface of the liver. A thick antiseptic dressing was added. The patient reacted under stimulants; the pulse became normal on the third day; the temperature rose on the second day, and continued until the eleventh, in spite of large doses of thallin, at 103° F. at evening, with corresponding pulse frequency; pulse and temperature were normal after the eleventh day.

The general condition of the patient was strikingly good in comparison: symptoms of peritonitis were wanting, and only the vicinity of the wound was somewhat sensitive.

On the fourth day, synchronous with a rise of temperature, frequent cough developed with muco-purulent blood-tinged sputum, and dulness and bronchial breathing over the lower portion of the right lung. Diarrhoea and pain about the cæcum were present for some days. Icterus was absent; bile coloring-matter was found once in the urine. The lung complication was thought to be due to non-septic embolus.

At the first dressing, on the morning after the injury, a free discharge of blood was found; the dressings remained unsoiled until the sixth day, when a muco-biliary secretion stained the gauze, which was removed, and a drainage tube alone substituted. The discharge of bile increased to six drachms daily, began to decrease on the twelfth day, and ceased on the fifth week. At the end of the fourth week the gauze was removed from the external wound, and at the end of the ninth week a fistula only remained. This persisted for several months; the patient was finally anesthetized, the fistula dilated, and a piece of gauze was found lodged deeply in the wound; after its removal rapid healing followed. In less than nine months from the time of the receipt of the injury the patient was at his work, free from all embarrassment. If the gauze had not been left in the wound, it is the opinion of Burckhardt that the patient would have recovered in eight or nine weeks.

TREATMENT OF EMPHYSEMA AND CATARRHAL BRONCHITIS.—DUJARDIN-BEAUMETZ recommends the following:

R.—Potass. iodidi ʒiv.
Aqueæ ʒviij.

Teaspoonful or tablespoonful in a glass of beer at the commencement of each meal. Also at each meal three capsules of terpinol. Baths of compressed air.—*Les Nouveaux Remèdes*, February 8, 1887.

MEAT EXTRACT IN ACUTE FEBRILE DISEASES.—It is plainly evident that we cannot suppose that the use of meat extract tends directly to nourish the febrile patient, because it contains neither albumen, fat, nor carbohydrates. But on account of the salts and extractive matter it does contain, the extract may, on the other hand, act as a stimulant and analeptic; and its stimulating action may prove prejudicial or beneficial according to circumstances. Wherever there is considerable irritability of the digestive tract, the administration in quantity of the extract is liable to produce flushings, palpitation, acceleration of the pulse, and still further deterioration of the appetite. When, however, there is not such condition of hyperæsthesia, and especially if the digestive functions are about to be restored, suitable quantities of the extract are not only tolerated, but are beneficial. It stimulates the appetite, and, on account of the needed salts it contains, acts as a restorative, and promotes plastic processes. The possibility of its irritant action should, however, not be forgotten.

The employment of meat extracts at the beginning of acute disease is at least to no purpose. If, however, at any time, symptoms appear rendering rapid stimulation necessary, as in aged persons (and in them possibly early in the attack), in febrile conditions following great loss of blood, in relapses, and in long-continued fever, when the nervous system, exhausted by the increased blood heat, sleeplessness, and deficient nutrition, requires a stimulant to enable it to continue its functions until the decline of the disease—in those conditions, as well as in cases of sudden prostration, a teaspoonful in warm water, or added to broth, administered several times daily, often proves to be of great utility. What has been said respecting meat extracts, applies to ordinary beef broth, though in certain respects in a less degree, inasmuch as the latter contains a proportion of gelatine and albuminous matter. The administration of meat broths, rendered still richer in albumen by the action of hydrochloric acid, or yolk of egg, is appropriate when a stimulating action is desirable, and when the condition of the digestion is such that nourishment of this kind is likely to be digested. In severe collapse their use is bootless, as absorption and assimilation are then nearly always extinguished.—*Journal of Dietetics*, January, 1887.

HYPODERMATIC INJECTION OF ATROPINE IN HÆMOP-TYSIS.—HAUSMANN advises this method of treatment in desperate cases of hæmoptysis when the use of other remedies has failed. He reports three cases which illustrate this point. One case had suffered from twelve severe hemorrhages in six hours. After the thirteenth the writer injected one-twenty-fifth of a grain of sulphate of atropine; the hemorrhage did not recur. A

similar result was obtained with a lady, in whose case ergotine and preparations of turpentine had failed.

In a third case of persistent hemorrhage through two winters, two injections, of one-twenty-fifth of a grain each, sufficed to check them.—*Revue Générale de Clinique et de Thérapeutique*, February 18, 1877.

ANTIPIRYN IN PHTHISIS.—Antipyrin has been shown to have various uses, but if the success which has been reported by Dr. Zakrzhevski in a paper contributed to the *Russian Military Medical Journal* attends the practice of other medical men, this drug will hereafter be looked upon as almost a specific. While under ordinary methods of treatment the mortality of phthical patients in the Helsingfors Hospital was 50 per cent., during the eight months in which the antipyrin treatment has been carried out not a single case has proved fatal, many of the patients having, on the contrary, improved so decidedly as to be able to return to their homes. The author much prefers the hypodermatic method of administering antipyrin, as the effect is produced in less than an hour, whereas when the drug is given by the mouth no effect is produced for from one to three hours. The action of antipyrin is to increase the force of the cardiac contractions, and so to raise the blood-pressure. In phthical patients it slows the pulse, but never quite to the normal rate. It also slows and deepens the respirations, and the digestive functions are improved. No albuminuria or other sign of renal disturbance was observed. With regard to the dose Dr. Zakrzhevski finds that it should be regulated by the strength of the patients. In a man with phthisis, who was still fairly robust, a full dose of ninety grains was required in order to produce the best effect; whereas, in greatly debilitated typhus patients ten or fifteen grains were quite sufficient, and in cases where there was decided exhaustion it was found that a dose of sixteen or seventeen grains was the largest that it was advisable to give.—*Lancet*, February 5, 1887.

AN INJECTING FLUID FOR ANATOMISTS.—IMADA, Professor in the Imperial Medical College, of Japan, has obtained good results with the following fluid in injecting cadavera: The following are the proportions for one body:

Starch	3xx.
Aquæ	3xx.

Mix thoroughly, and add the following prepared as directed:

Wheat flour	3ij.
Vermilion	3ij to 3iij.

Mix these articles in a dry state, triturate together, and add water, 3ij.

After injecting this mass an injection of solution of carbolic acid should be made to prevent putrefaction. The following has been found useful:

Acid. carbolic.	3ij.
Glycerin.	3jss.
Aquæ	3ij.

—*Sei I. Kwai Journal*, January, 1887.

ON INTUBATION OF THE LARYNX.—The *Journal of Laryngology* for February, 1887, contains the following

regarding BOUCHUT's early conclusions concerning intubation:

Referring to recent literature, Dr. Bouchut relates the fact that nearly twenty years ago he, being then struck with the terrible inefficiency of tracheotomy, sought some means of replacing this operation, and read at the Academy of Medicine (in 1858) a memoir "On a New Method of Treating Croup by Tubage of the Larynx." He there sought to prove that it was easy to practise tubage of the larynx by means of a canula fixed on the vocal cords and not interfering with the functions of the epiglottis. He added that it was possible to remedy in this manner the asphyxia of croup and other affections of the larynx, and that this method was to be preferred to tracheotomy. Trousseau then formulated this conclusion—tubage cannot replace tracheotomy except in rare instances, and this is the principal means of dealing with croups in which other medical treatment has failed. Bouchut's communication was treated curiously as an unpatriotic attempt to depreciate a method of treatment "entirely French," and the discussion which followed took the character of a veritable "execution." Recent publications have proved that the Academy was wrong, and that Bouchut was right.

HEROIC DOSE OF TURPENTINE IN CROUP.—In an obstinate and dangerous case of diphtheritic croup, which had extended into the larynx, after painting with boracic acid, and subsequently with a chloric acid application, without benefit, the child's condition becoming worse and worse, DR. LEWENTANER, of Constantinople, before resorting to tracheotomy, remembering a paper by Demlow in which turpentine was recommended in these cases, determined to give it a trial, and so administered with his own hands a teaspoonful of the pure oleum terebinthæ, giving after it some warm milk. In a quarter of an hour the labored laryngeal breathing had given way to normal respiration sounds. That night the child slept well and was quite free from the brassy cough which had previously been present. The next morning he was quite lively and was found playing with his toys. All trace of false membrane had disappeared from the pharynx, which merely presented a reddened surface. Convalescence was rapid and uninterrupted. The turpentine, however, caused an eruption on the face, trunk, and extremities, having much the same appearance as the rash of measles, but of a brighter red. The spots completely faded in two days, and were followed by no sign of desquamation.—*Lancet*, February 5, 1887.

ANTIFEBRIN IN THE ROYAL INFIRMARY, EDINBURGH.—Antifebrin has now been employed for several months in the Royal Infirmary, Edinburgh. It was used by Prof. Grainger Stewart shortly after the first account of its properties was published, and since then it has been largely used in more than one ward. The antipyretic qualities of the acetanilide have been most thoroughly tested, and it now occupies a high place among the febrifuge resources of the Infirmary. More especially it has proved superior to antipyrin, kairin, and thallin, in its freedom from accompanying disadvantages, such as the production of vomiting, rigors, and other discomfort, at the various stages of its action.—*British Medical Journal*, February 19, 1887.

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SATURDAY, MARCH 12, 1887.

THE PROGNOSIS IN CHRONIC VALVULAR DISEASES OF THE HEART.

At the last meeting of the British Medical Association there was a discussion on this subject, elicited by a remarkable report of SIR ANDREW CLARK on "Cases of valvular disease of the heart known to have existed for over five years without causing serious symptoms," which appeared in the *British Medical Journal* for February 5th, 12th, and 19th. From his case books, in private practice, between the years 1873 and 1886 he has extracted and tabulated 683 cases in which there existed chronic valvular disease, the presence of which was not indicated by symptoms, and did not sensibly interfere with health. In selecting these cases, it is distinctly stated that there were excluded all instances of mere murmurishness, all inconstant and intermittent murmurs, all which were doubtfully endocardial, all in the pulmonary and tricuspid areas, and all cases which, independently of cardiac examination, had subjective or objective symptoms of heart disease.

These 683 persons consulted Sir Andrew Clark for various affections unconnected with the heart lesions; thus 326 were suffering from disorders of the digestive system; 134 had disorders of the nervous system; 61 had rheumatic affections; 47 were suffering from disorders of the respiratory system; 30 from affections of the skin, and 23 had gout. Elaborate tables state the age, sex, valve affected, character of the murmur, probable cause, duration, habits of life, general health, and other points of interest.

He then proceeds to discuss the histories, habits, environment, and general condition of these patients in order to discover to what circumstances they

owed immunity from the secondary consequences of valvular disease. As conditions which favor this, he gives, "a simple, regular, occupied, and moderately active life, early hours, a tranquil mind, disciplined control of the emotions and will; regular, but neither too frequent nor too full, supplies of fresh nourishing food; extreme moderation in the use of tea, coffee, and alcohol; avoidance of sudden and violent forms of exertion, of hurry and worry, of prolonged tension of mind and of serious and depressing cares and fears." Of circumstances which promote the consequences of valve disease, some act directly upon the heart, others on the general health. Chief among them are "irregularity of life, excesses and irregularities of eating and drinking, the too generous use of alcoholic beverages, the intemperate use of liquids in themselves harmless, the abuse of tea, coffee, and tobacco, excessive and insufficient exercise, anxious introspection and self-distrust, undisciplined emotions, prolonged and serious cares, inattention to the secretory functions of the body, and a sedentary, self-indulgent life." In a given case of valve disease, for example, mitral regurgitation, Sir Andrew Clark holds that the following conditions would justify the physician in permitting him to continue at his ordinary work, sustain an application for life assurance, or sanction marriage: good general health, and just habits of living; no special liability to catarrhal or rheumatic affections, the origin of the valve lesion independently of degeneration, the existence of the valve lesion without change for over three years, sound ventricles of regular action, sound arteries, free course of blood through the cervical veins, and freedom from pulmonary, hepatic, and renal congestion. Ten or twelve very interesting illustrative cases are given of persons living long and useful lives after the discovery by the physician of, what appeared at the time, serious heart disease.

Among the conclusions based on an analysis of these cases, the following will command the attention of those interested in examinations of the heart: That there are many persons with long-standing valvular disease engaged in the active business of life, who, without any symptom of heart disorder, have enjoyed good health and have reached an advanced age; that the mitral regurgitant murmurs so often encountered in chorea, for the most part, disappear within eight or nine years after the attack; that valvular inflammations and their effects arising in the course of rheumatic fever do sometimes disappear and leave behind no clinical evidence of their former existence, and that this occurring for the most part in the young, also occurs sometimes in the middle-aged; that the signs of valvular defects arising out of the degenerative changes of middle life do also, on rare occasions,

disappear, and that, when circulatory and respiratory disturbances accompany their commencement, they sometimes subside, and permit of apparently complete readjustment.

To certain other points in this report, and in the discussion, we shall again refer, as the matter is one of special interest to every practising physician.

NEPHROLITHOTOMY.

In a recent interesting discussion at the Clinical Society of London, recorded in the *Lancet* of February 19th, KNOWSLEY THORNTON reported seven cases of nephrolithotomy, three by the lumbar incision, with one death, and four by the combined ventral and lumbar incision, also with one death; the fatal result in both instances being due to suppression of urine. In his remarks he condemned the lumbar operation, and asserted that the combined operation was the proper one for the following reasons: That the affected kidney would always be found; a healthy one would never be cut into, and the one with the stone be left untouched; that the peritoneum would never be damaged without knowing it; that both kidneys and ureters could be examined through the ventral wound; and, finally, that, through such an examination, a decision could be reached as to whether nephrotomy or nephrectomy was the proper operation in each individual case.

In support of the first two objections to lumbar nephrolithotomy, a case was narrated which pointed to left renal calculus, but in which, by the combined incision, five calculi were removed from the right organ. The third objection, that the peritoneum might be opened through the loin, while among the possibilities, has no foundation in fact; while the fourth and fifth advantages in favor of the combined incision are partly true and partly assumed. As just pointed out, symptoms referable to one side might be present when the calculus was on the opposite side, and there can be no question that an exact diagnosis is essential to success. Palpation of the kidney through the abdomen, it must, however, be stated, may fail to detect the concretion; and, as Thomas Smith stated in the discussion, cases have occurred "in which the most careful palpation of the kidney, and even pressing it against a solid table, was unable to diagnosticate the presence of a stone in the removed organ."

While some of the objections to lumbar nephrolithotomy hold good, we take it that surgeons in general will scarcely be induced to relinquish the safer for the graver procedure, the latter of which has, moreover, the decided disadvantage of exposing the patient to the risk of ventral hernia. Up to the present date, 36 lumbar incisions have afforded 4 deaths, or a mortality of 11 per cent., while Thorn-

ton's 4 combined lumbar and ventral operations show 1 death, or a mortality of 25 per cent.

PAROXYSMAL CARDIAC DYSPNOEA.

ASTHMA, literally *panting*, occurs when the air or the blood enters the lungs with difficulty. Cardiac asthma, or dyspnoea as it is now more frequently called, is one of the most constant and troublesome symptoms of heart disease, and may be continuous or paroxysmal. With failure of compensation in valvular disease, a more or less continuous dyspnoea develops, and usually prior to this period there are occasional attacks of shortness of breath, induced by exertion, or flatulence.

In this number of THE NEWS, DR. LOOMIS calls attention to the more serious form of paroxysmal cardiac dyspnoea, commonly associated with myocardial rather than valvular changes, and which may prove suddenly fatal. Scarcely sufficient stress is laid upon the frequency of the occurrence of these attacks by systematic writers on the heart, and the cases reported by Dr. Loomis form a valuable contribution to our knowledge of the conditions under which they occur.

The most constant lesion is degeneration and thinning of the cardiac walls, more advanced on the right than on the left side. Often, too, the coronary arteries are occluded. The primary or predisposing cause is a gradual failure in the organic power of the heart, and "the exciting cause of the paroxysm is anything which will lead the heart-failure to an entire suspension of the cardiac circulation." In the majority of instances Dr. Loomis holds that the arrest is in the right heart, and in this agrees with Bramwell, who, in his too short description of this form of dyspnoea, ascribes it to sudden distention of the right ventricle and imperfect supply of blood to the lungs. It is a matter of common observation that these attacks are particularly apt to occur in the early morning, and patients will awake from a sound sleep in a paroxysm of most distressing dyspnoea, which may, indeed, as in two of the instances referred to in the paper, prove fatal.

THE TREATMENT OF THE THIRD STAGE OF LABOR.

EXPERIMENTS, conducted lately in some of the large lying-in hospitals of Germany, to determine the relative merits of the expectant or Ahlfeld's treatment of the third stage of labor, and of the expression of the placenta according to Credé's method, have seemed to demonstrate the superiority of the latter plan of treatment. AHLFELD, however, in the *Centralblatt für Gynäkologie*, claims that his method has not been fairly treated, and explains again that his plan is to leave the uterus untouched for an hour

and a half after the birth of the child, and then, if the placenta has not been already expelled, to express it, while the well-known method of Credé, on the other hand, consists in expressing the placenta during one of the first two or three pains after the birth of the child.

The lesson to be learned by the practical physician from this discussion, is that here, as in so many other instances, his safest course lies in *medias res*. While it is usually unnecessary to express the placenta the minute the child is born, it is still less desirable to allow the woman to lie half delivered, in what has been happily called the squalor of labor, for an hour and a half. If a choice is to be made between these two methods, it will certainly incline more toward that of Credé than that of Ahlfeld.

QUACK ADVERTISEMENTS IN RELIGIOUS JOURNALS.

MEDICINE has no quarrel with theology. The physician and the religious teacher have their respective spheres, and neither conflicts with the other. Once, indeed, their functions were united, and he who cared for the soul also had charge of the body; but the separation of the offices has been a necessary result of the progress of knowledge. While each has his respective duties, they can often be mutually helpful, and any alienation between them is to be deprecated. Yet how often is occasion given for such antagonism, by clerical endorsement of quacks and of quackery! It is right, however, that we should here say that many years' observation has led us to believe that it is much rarer to find a Roman Catholic priest supporting irregular systems of medicine, or recommending nostrums, than it is to find a Protestant clergyman doing so. We believe this statement will be confirmed by others, no matter how it may be explained.

It is proper, too, that attention should be called to the readiness with which quack advertisements are admitted into religious journals. We have before us a weekly publication of one of the most intelligent and strongest Protestant denominations, and in this journal, which is doubtless read by thousands throughout the United States, there are between fifteen and twenty quack advertisements. Some of them are deceptively inserted with reading matter, as if part of it; thus "almost miraculous" cures by a drug, which most physicians know to have very slight therapeutic power, precedes a news item, and that item is followed by the advertisement of a "syrup" for teething children which depends chiefly for its power upon opium, a remedy which should not be employed without a physician's advice; it is stated that this medicine "softens the gums," an assertion which any man of sufficient intelligence to conduct a religious journal ought to know is a

lie. Then follows a statement in regard to a remedy for consumption, "thousands of hopeless cases have been permanently cured," and this every intelligent man and woman in the land knows is false, yet there are hundreds of the poor victims of the disease, who are thus tempted into spending their last dollar to secure such a sovereign remedy. Then there is another preparation, a small particle of which is placed in each nostril, which, among other marvelous results, cures "hay-fever." We find, too, that some one advertises a certain cure for "even the worst cases of epilepsy," another who, to the disgrace of the clerical profession, or as a trick to catch the unwary, puts "Reverend" before his name, promises to cure any case of catarrh or bronchitis, "no matter how desperate," and then, as if to complete a triad of falsehoods, these two advertisements are followed by one in which "a positive and speedy cure" of goitre is promised.

But we desist from the sickening review of this prostitution of the religious press to falsehood and fraud. No matter how earnestly and eloquently a journal may plead for honesty and truth, if its advertising pages are occupied by such mischievous statements, its influence for good is sadly weakened. The editor, we will suppose, says "Let us pray," and some of the advertisers respond, "Let us prey," and he lets them! A clean religious journal, one from which all quack advertisements are excluded, is sadly needed, and the need ought not to continue long.

At a recent meeting of the New York Surgical Society, DR. R. F. WEIR read a valuable paper on "Four Months' Operative Work at the New York Hospital," which may be found in the last and present numbers of THE MEDICAL NEWS.

Our object in calling attention to these articles is to commend the plan originated by Dr. Weir, and to express the hope that it may be imitated by other hospital surgeons. If it be generally adopted, an important collection of facts will be added to our common stock of knowledge; it should be distinctly borne in mind, however, that the true value of such contributions will depend upon accurate reports of minute details of individual cases—details which must embrace the symptomatology from the outset—as well as the manual procedures adopted when they vary from the ordinary methods. In such reports, too, nothing should be concealed. If a sponge or two be left behind in a wound, as happened in an operation for evacuating a perinephritic abscess, recorded by Weir, or other mishap be met with, it must be candidly stated. We are all fallible; accidents happen to the best of operators; and their reputation is rather enhanced than hurt by the open confession of their faults.

At a recent meeting of the *Société de Thérapeutique*, there was a discussion on the value of liquid vaseline, introduced by Meunier, of Lyons, as a medium for the hypodermatic injection of such irritating bodies as iodoform, iodol, thymol, menthol, etc., which are very apt to produce abscess. Meunier's formula has already been published in *THE NEWS* of February 26th. DUJARDIN-BEAUMETZ stated that he had found this plan very advantageous, particularly in using eucalyptol and iodoform. The injection is not painful, and it does not cause local trouble.

THE remarkable results which have followed operative interference in diseases of the bile passages are illustrated by the reports in *THE NEWS* of February 19th and 26th, of two cases by OHAGE, of St. Paul, to whom is due the credit of having been the first in this country to perform cholecystectomy. At a recent meeting of the Berliner Medicinische Gesellschaft, January 26th, LANGENBUCH, who devised the operation, stated that he had operated in twelve cases, of which two had died. This makes the total number of cases sixteen, with a mortality of two, a very much lower mortality than in cholecystotomy.

In the Sundry Civil Appropriation Bill, Congress has granted an appropriation of \$10,000 toward defraying the expenses incident to the meeting of the International Medical Congress at Washington this autumn. \$35,000 was the amount asked for.

MR. J. S. MORGAN, the well-known American banker in London, has promised the munificent sum of £10,000 in aid of the funds of Guy's Hospital, on condition that the £100,000 required to put the institution into a state of thorough efficiency be secured by May 1st.

An Act to prevent traffic in impure and unwholesome milk, providing for the appointment of inspectors, and establishing penalties for infringements of the rigidly defined conditions governing the sale of milk, is now under consideration by the Pennsylvania Legislature.

Milk exposed to emanations or exhalations from the discharges or bodies of persons affected with any contagious disease, or milk from cows in a crowded or other unhealthy condition, or fed upon distillery waste, or any putrefying substance, is excluded from sale, together with milk in every phase of dilution and adulteration. The bill is defective in not defining the maximum quantity of water which may be present in milk without dilution, and in not making direct provision by which inspectors may be empowered to visit the dairies, but, despite these omissions, its tendency is good and the interests of

the public demand that it should speedily become a law.

THE President failed to sign, before the adjournment of Congress, the Act to establish the order of promotion in the Medical Department of the Army, of which we gave an abstract in our issue of February 26th, and hence it falls.

THE University of the City of New York on Tuesday conferred the degree of M.D. on one hundred and fifty-one graduates.

THE Long Island College Hospital held its twenty-eighth annual commencement last week, and President Hutchison conferred the degree of M.D. on thirty candidates.

AN Act before the Legislature of New York calls for the revising and codifying of the multifarious laws that now stand upon the statute-books for the regulation of the medical profession. There are not far from twenty different acts, beginning with that passed in 1806, relating to the licensing and registration of the profession. As might be expected, there is no agreement or harmony between these laws, and even medical lawyers are befogged by their incompatibilities and contradictions. The time has come when a carefully considered codifying act will be useful, and it is practicable now to pass such an act; and the one above referred to would appear to be such, from the fact that it was framed by the legal adviser of the New York County Medical Society, who has had a vast experience in the courts in the prosecution of fraudulent practitioners, and in otherwise getting at the purport and intent of the laws. The proposed law aims to procure a registration of physicians who can present a good and sufficient form of credentials, and to reject those who cannot.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting March 3, 1887.

THE VICE-PRESIDENT, CHARLES CARROLL LEE, M.D.,
IN THE CHAIR.

DR. WILLIAM H. THOMSON read a paper on the

**PATHOLOGY AND TREATMENT OF EPILEPSY, BASED ON
NOTES OF SIXTY CONSECUTIVE CASES IN PRIVATE
PRACTICE.**

He related the case of a gentleman who was subject to sudden and transitory attacks of aphasia, always without any loss of consciousness whatever, and without the slightest sign of motor disturbance of any kind. The phenomena of an epileptic fit are usually described as consisting, first, of an initial aura; second, loss of consciousness; and, third, convulsions; but, not-

withstanding the prevalent opinion as to the essential clinical characters of the disease, he believed this case to be one of true epilepsy.

He then proceeded to inquire what the essential and invariable element in epilepsy really is, and expressed his conviction that it is *suddenness*. Epilepsy, he said, is the single truly sudden disease. The only affections which resemble it in this particular are laryngismus stridulus and spasmodic asthma; but in them the suddenness of the attack is not absolute, as in epilepsy. Apoplexy, hemiplegia, and sunstroke cannot be strictly compared with it, as they are in reality accidents, and more or less permanent in character. The attacks of hysteria and of neuralgia are not nearly so sudden as those of epilepsy. Other affections are more or less progressive in their onset. The only apparent exception is angina pectoris; but this affection acts on the principle of shock. All recurring symptoms coming on suddenly, such as nausea, visceral disturbances, headache, etc., are ominous, as they may perhaps be the beginning of epilepsy. The importance of this element of suddenness, he thought, could not be overrated.

The *petit mal* he considered the most real, as well as the most objectionable kind of epilepsy. He then referred to the cell discharge or explosive theory of epilepsy, and quoted Hughlings Jackson in regard to it. The exhaustion of the cells of the sensorium, he thought, was the result of the discharge which had taken place. In this connection Dr. Thomson referred to Nothnagel's "convulsive centre," and said that if no form of epilepsy except the *petit mal* had ever been observed, he felt certain that the explosive theory would never have been proposed. In answer to the views of Jackson and Gowers, he would state that in every convulsive seizure a motor discharge is granted, but to say that the first event in epilepsy is a motor discharge is a very different matter. All motor phenomena except the voluntary, he believed, are under the control of sensory impulse, and a sudden suspension of the regulating sensory impression may result from various causes. Any irregular motor phenomena are, therefore, due to a loss of the customary sensory influence. This explains the clinical facts of epilepsy without the necessity of supposing any additional nervous force being called into action. It is comparable to the jar imparted to an ocean steamer when the propeller is lifted by the height of a wave out of the water; the customary resistance of the latter being temporarily withdrawn, but no additional power being imparted to the screw.

He then referred to pleuritic epilepsy, which has been known to result from the injection into the pleural cavity of weak solutions of iodine, carbolic acid, etc. In cases of this kind the face became pale, inspiration was suspended, and the pulse could be scarcely felt. Spasms, at first confined to one side of the face, afterward became general, and finally there was epileptic coma. In a number of cases death had resulted; but no lesion of the brain was discoverable at the autopsy. The effects here produced were certainly not due to the therapeutic agent employed, but were the result of a quite unusual impression on the nerves of a cavity wholly unaccustomed to this kind of an irritation. Of a similar character were the experiments of Brown-

Séguard, who found that in guinea-pigs and some other animals, section of the spinal cord, or even of one or both sciatic nerves, was followed by well-marked epileptiform fits, which returned again and again, and could at any time be excited by slight irritation of the cheek or of the side of the neck.

Dr. Thomson considered the phenomena of epilepsy to be due to the effect of an afferent sensory impression, when there is some abnormal condition of the cells of the nerve centres. What this condition is, he was not prepared to say with any positiveness, but it seemed probable to him that it is one of malnutrition. It might be asked if he would assert that all cases of epilepsy are attended with sensory impressions, in the face of the well-known fact that in certain instances there were definite lesions of the brain present. The answer was, that we do not get rid of the sensory element when we enter the cranial cavity. There is a sensory as well as a motor aphasia. A syphilitic gumma of the brain may be as true an excitant of sensory irritability as an external influence; and the same is true of any source of irritation in the brain. He did not hesitate to acknowledge that a motor centre could be excited by the application of an electric current after trephining the skull; but the explanation of the phenomena noted he believed to be in the fact of a wholly unaccustomed irritation in a centre accustomed to act in response to sensory impressions. The hypothesis of a sudden impression of sensory functions, he believed, most fully explained all the phenomena of epilepsy.

Ever since he had become satisfied in his own mind that the lesion of epilepsy is to be found in the sensory, rather than the motor centres, Dr. Thomson said he had conducted his treatment in accordance with this view, and as a result he had grown less sceptical than formerly of the advantages of treatment in this disease. The first thing that he aims at is the improvement of nerve-nutrition, and by far the best agent for this purpose at our command is cod-liver oil. It increases the number of blood-corpuscles more rapidly than iron, and has a greater effect upon nutrition than any other remedy. It is particularly indicated in malnutrition of the nervous system, because the nerve-tissue is normally richer in blood-fat than any other tissue of the body. Hence it is to be regarded as the great prophylactic in all neurotic families. In epilepsy he never fails to prescribe it as regularly as he does in phthisis. Another advantage that it has is, that it counteracts in a very successful manner the debilitating effects of the bromides. Phosphorus he had also found of much service in improving nerve-nutrition, and he usually employed it in the form of the official syrup of the hypophosphites, with the addition of one-fifth part dilute phosphoric acid. An important part of the treatment he considered the total exclusion of all butcher meat for a period of two years; though poultry and fish are permissible. Animal diet he believed predisposes to convulsions in direct proportion to the quantity in which it is used. The tendency to convulsions in the carnivorous animals, and the absence of this in herbivorous, is due, in his opinion, to the respective diet of each class. Another thing to be avoided, is eating fast, as the too rapid mastication and swallowing of food seem to act directly on the convulsive centre of the medulla

oblongata. It is possible that the habit of eating too fast might thus induce confirmed epilepsy.

Like all other physicians, he had come to place great reliance on the use of the bromides, which so successfully control peripheral irritation. If any one doubted this, let him give thirty grains of bromide of potassium to a patient with an intolerant throat in whose case he wished to make a laryngeal examination. In the long-continued use of the remedy the great thing is to control the effects of bromism.

Dr. Thomson had found that in forty per cent. of the cases observed by him there was persistent cortical irritation, as indicated by muscular twitching during sleep, and in this class of cases he is in the habit of employing, in addition to the bromides, the bichloride of mercury, perhaps alternating it occasionally with oleate of mercury by inunction. This mercurial treatment he finds a very useful adjuvant to the bromides.

He uses belladonna or zinc oxide in all cases in which the attacks show any connection with disturbances in the alimentary canal. In this connection he remarked that bad breath is often a prodrome, and that he uses turpentine freely when there is gastro-intestinal irritation. When there is reflex irritability he uses chloral hydrate or Hoffmann's anodyne in addition to the bromides. Digitalis he employs in all cases characterized by vascular disturbance, or where there is an involuntary discharge of urine during the epileptic attack. The published experience of Dr. Newington, who found that hot mustard baths are very useful in acute mania by cutting short the attack, and inducing sleep, has led him to employ a red pepper pack at night (one drachm of capsicum being used to the pint of hot water for this purpose), in a certain proportion of cases. In one instance, at his college clinic, a patient, who ordinarily had two epileptic attacks a day, did not have a single one for some weeks after this measure was resorted to, the disease being completely arrested by the peripheral excitation thus secured. These points show, he thinks, the direction in which efforts should be made by which better results might be expected in the future, and thus relieve the treatment of epilepsy from the grievous burden of empiricism which it has so long borne.

Dr. L. PUTZEL said that from a clinical point of view he did not think that Dr. Thomson's assertion that the attack is always sudden could be maintained. It is a well-established fact that there are a certain proportion of cases in which there are prodromata, often lasting for two or three days, or longer, such as digestive or mental disturbances. In regard to Hughlings Jackson's views, if he remembered them rightly, that authority simply claimed that there is an explosive discharge of nerve-cells in epilepsy, but did not imply that this discharge is from the motor cells especially. In fact, Dr. Putzel could not see how, in view of his well-known opinions upon this disease, he could confine the phenomenon to the motor cells, since he claimed that such conditions as hemicrania, for instance, belonged to epilepsy. Furthermore, he held that one aura, which may be purely mental, may, at times, constitute the whole attack.

Dr. Putzel thought that in *petit mal* paralytic symptoms are very rare. Paralytic trouble, in his experience, is usually met with after prolonged convulsions, and oc-

curs as the result of the exhaustion incident thereto. Besides, he could not understand how the sensory impulse inhibits the motor, as stated by Dr. Thomson. In regard to so-called pleuritic epilepsy, it is not proved that the convulsions in the cases referred to were epileptic. They might, perhaps, be epileptiform, but unless a convulsive habit is established, they could not, in his opinion, be said to constitute true epilepsy. In the same way, he did not think that the convulsions of children in teething, the attack being merely the result of a temporary local irritation, could be called epilepsy; although they are often epileptiform in character. Belladonna he had used principally in nocturnal epilepsy, and in conjunction with the bromides. He agreed with Dr. Thomson, that epilepsy is a disease of impaired nutrition, and that cod-liver oil is often, therefore, of very great benefit in the treatment.

DR. MARY PUTNAM JACOBI made a few remarks, in the course of which she alluded to the confirmation of Dr. Thomson's views in regard to the danger of eating fast afforded by Lauder Brunton, who had also noticed the effect of rapid mastication in exciting the already excited centres of the medulla. As to the location of the origin of epileptic attacks in the brain, Gowers had found that one-fifth of all auras consisted of auras of the special senses.

Dr. WM. H. DRAPER said that, as regards the pathology of epilepsy, the author of this paper did not seem to have thrown much light upon that obscure subject. He had confounded with the disease convulsive affections, which he did not think could be at all regarded as epileptic. As Dr. Putzel had remarked, he had spoken of convulsions produced by a variety of peripheral irritations as if they were true epilepsy, and in this opinion he could not agree. In infants and others we so often meet with conditions in which convulsions are so easily induced and which so readily disappear under treatment adapted to remove the source of irritation and improve nutrition, that he did not think that these temporary conditions could be properly compared with that grave affection which we call epilepsy.

In regard to the management, he said he agreed with Dr. Thomson as to the treatment of the impaired nutrition which was so common by cod-liver oil and tonics. In addition to improving the general nutrition, it is necessary to study very carefully the peripheral irritation which provokes the attack. In a large number of cases this is to be met with in the gastro-intestinal tract. He could not say that he agreed with Dr. Thomson as to the danger of animal food in epilepsy. On the contrary, he was inclined to think that the origination of an attack is much more likely to follow the too free ingestion of starchy food and sweets, or of the fermented liquors. He had, therefore, preferred to have his patients use principally animal food and milk, and take a diminished quantity of the carbo-hydrates; and very good results had followed the adoption of this plan of diet.

The next most important thing is the administration of some drug having the effect of diminishing the extreme excitability of the nervous centres, which is always the essential prerequisite of an attack of epilepsy. For this purpose there is nothing, in his opinion, to equal the bromide of potassium. These were all the elements of a rational treatment of this disease, and

yet he presumed that it was the experience of every physician present that there are certain cases in which all the measures referred to are of little value. Bromide of potassium sometimes signally fails unless pushed to the point of producing profound bromism; so that patients would rather have their fits at regular intervals than endure the wretched hebetude which the drug induces.

DR. E. DARWIN HUDSON, JR., said that his idea of epilepsy was, that in it there is a disturbance of the equilibrium of the nervous centres. The attack is characterized, in the first place, by a withdrawal of mental control and unconsciousness. He had met with but one case of convulsions in which consciousness was retained. They were epileptiform in character, and ended fatally, and even here consciousness was lost some time before death. In epilepsy he believed there was cerebral anæmia, and an explosion due to disturbance of the vascular equilibrium. From a clinical standpoint, it is often difficult to say what constitutes epileptiform attacks, and what true epilepsy. Successive seizures produced by peripheral irritation, not infrequently seem eventually to result in epilepsy, if they are allowed to go on without interference. He agreed with the other speakers, that the bromides constitute the most reliable medicinal means of treatment.

DR. THOMSON said that he did not intend to imply that epileptic attacks have no prodromata. On the contrary, it was extremely common in his experience to meet with patients who were almost always aware of the imminence of the attack. But a prodroma is not the attack itself, and it was this that he particularly referred to when speaking of the suddenness of the affection. He had studied this matter very carefully, and his conclusion was that epilepsy is to be distinguished from all other diseases by its suddenness. In regard to Hughlings Jackson's views, he said that he never understood his statement as referring *only* to motor discharges; but it certainly was a fact that he especially dwelt upon the explosion of motor cells. Instead of regarding sensory impulses as being of a stimulating character, Dr. Thomson said he was inclined to look upon these as a regulating force. Hence the study of the connection between any motor disturbance and the antecedent sensory impression, seemed to him of importance, as indicating the direction in which advances in our knowledge of epilepsy are to be looked for.

In regard to his confounding all sorts of convulsions with epilepsy, he remarked that Dr. Putzel, and others who had spoken, did not regard the convulsions of dentition as of an epileptic character; but he had compared these attacks very carefully with those of acknowledged epilepsy, and he had been entirely unable to discover any difference whatever between the two. First births, and especially when the children are males, he went on to say, give a larger percentage of cases of epilepsy than subsequent ones, on account of the greater compression of the brain to which the infants are subjected during the process of parturition. He then related a case of his own, in which, on account of a contracted pelvis, there was great delay in the delivery of the child, and after it was born he had been obliged to use oxygen gas for three hours, in order to resuscitate it, and when it was nine months old the child began to have convulsions, and these continued from

time to time until its death, at the age of seven years. It was never able to walk. He studied the attacks in this case with great care, to see if there was any difference between them and the ordinary convulsions of children from dentition, and he became convinced that a more mythical distinction could not exist. It was simply a distinction without a difference. Here was exactly the same class of phenomena, and he would, therefore, be exceedingly obliged to Dr. Putzel and Dr. Draper if they would point out to him in what particular an epileptiform convulsion is different from an epileptic convulsion. As to the pleuritic cases which he had mentioned, if they were not epilepsy, what was the affection from which the patients suffered?

DR. DRAPER replied that in saying that convulsions were epileptiform, he implied simply that they had the form of epilepsy, but not the substance. He thought there is a great difference between these temporary seizures and the regular recurrence of seizures in true epilepsy. In the form of the attack, he was quite willing to acknowledge that there is no perceptible difference.

DR. A. D. ROCKWELL read a paper on

THE VALUE OF ELECTRICITY IN THE TREATMENT OF EPILEPSY.

Having mentioned that he had read a preliminary paper on this subject before the Medical Society of the County of New York in 1878, he said that there is a certain proportion of cases of epilepsy which fails to receive permanent benefit from the use of the bromides, as usually employed, but which apparently completely recover after the assistance of electricity has been invoked, in connection with the bromides. Epilepsy is, in this respect, analogous to chorea. Arsenic is universally acknowledged to be a remedy of the greatest value in this affection; but there are certain cases in which it fails to afford relief, unless its use is supplemented by electricity.

DR. MEREDITH CLYMER, in some most excellent remarks on the treatment of epilepsy, stated that he had never heard of a permanent cure of the disease under the use of the bromides, either alone or in combination. While this might be regarded as an extreme statement, the suggestion that the best results will follow only when we call to our aid every measure that will tend to increase and develop vital powers generally would commend itself to all. It is not alone, therefore, on the theory of a special influence on the nerve-centres, or even the cerebral circulation, that he employs electricity as an adjuvant to the bromides, but also because of its undoubted and powerful constitutional effects. It is a tonic, but it has both stimulating and sedative effects. In this, as in various other forms of central disease, he almost always associated and alternated central galvanization with general faradization.

Central galvanization is analogous to the effect of the bromides, producing a profound tendency to drowsiness. In some cases sound sleep has been induced with the subject in an upright position, while receiving the current through the brain. He recalled one patient under treatment by central galvanization, who was repeatedly put to sleep within a minute after the beginning of the application. In epilepsy there is a disturbance of the centres of the cerebro-spinal system. There is a hyper-excitability of the nerve-cells, which is dynamic,

rather than physical; and this hyper-excitability is kept in check by galvanism as readily as the bromides.

In one case which he mentioned, the patient, a female, had been under observation for fifteen years. Central galvanization and general faradization had for several years been employed, with intervals of rest, and for four years she had now been entirely free from an epileptic attack, while her mental and moral characteristics, which were formerly very much impaired, had been completely restored. Other satisfactory cases were also related, and in connection with one of them Dr. Rockwell incidentally stated that he had found the effect of the bromides in epilepsy to be enhanced by the addition of one or two grains of chloral hydrate to each dose. The total number of cases in which he had employed electricity was twenty-eight; but ten of the patients had abandoned the treatment too early to allow any conclusions to be drawn from them. In three cases electricity seemed in no way to assist the action of the bromides. In one of these the attacks came on both by day and night, and in the other two occurred only in the daytime. In eight cases the use of electricity was attended with a certain amount of benefit, varying in different instances, but not to such a marked degree as in the remaining seven cases. In two of these the patients recovered entirely, and in the other five there was very decided improvement.

The conclusions arrived at by Dr. Rockwell were somewhat as follows:

First. Electricity possesses a certain value in the treatment of epilepsy. It is not claimed that it alone can cure the disease, but in many instances it is of great service as an adjuvant to the bromides.

Second. In the nocturnal variety its good effects are especially marked.

Third. The methods of application should be central galvanization and general faradization.

Fourth. It is important that the agent should be administered with great care. Anything like a shock to the nervous system should be avoided, and the applications should not be continued too long at a time.

Fifth. The treatment should be continued, with suitable intermissions, for at least two years after the last occurrence of epileptic symptoms.

DR. THOMSON said that he had had no experience with the use of electricity in epilepsy, but he should suppose that its efficacy depended on the peripheral irritation excited by it, as in the case of the red pepper pack to which he had referred.

DR. ROCKWELL said, in reply, that the benefit from this agent is not due to peripheric irritation, for if this were the case we should employ the faradic current and not the galvanic. The effect of the latter, as he had observed in the paper, appeared to be analogous to that of the bromides.

THE NEW BUILDING FOR THE ACADEMY.

Before the Academy adjourned the following resolution was adopted:

Resolved, That the Trustees and Council be, and are hereby empowered to purchase a site or building, or to erect a new building for the Academy, when such a course shall be considered expedient.

NEW YORK SURGICAL SOCIETY.

Stated Meeting, February 8, 1887.

THE PRESIDENT, CHARLES MCBURNEY, M.D.,
IN THE CHAIR.

FOUR MONTHS' OPERATIVE WORK AT THE NEW YORK HOSPITAL.

(Concluded from page 277)

DR. WEIR stated that on the kidney a series of highly important operations have been resorted to. The first case of the number to which he asked attention is one of

LACERATION OF THE KIDNEY WITH PERINEPHRITIC ABSCESS AND RENAL FISTULÆ,

which occurred in a youth of twenty, who three years before coming under care had fallen a distance of six or eight feet and struck his right side heavily on an iron bar. He had, following this, severe hæmaturia for three weeks, when fever, local pain, swelling, etc., showed that suppuration was progressing in the right lumbar region. An incision was then made by my colleague, Dr. W. T. Bull, and a large amount of pus evacuated. A sinus persisted for a long time, which, healing at times, would break out again and freely discharge matter. Since July last he has been unable to get about by reason of the pain in the flank and also in the rectum. In the left iliac fossa were found much inflammatory hardness and tenderness running upward to a large fistulous opening between the middle of the iliac crest and the ribs. Through this opening a probe could be passed nine inches downward to the iliac fossa. Above the opening near the spine was another through which a probe entered inward four inches toward the kidney. From four to six ounces of pus were daily discharged. The patient was pale, but in fair condition, and anxious to have relief from the persistent suppuration. By the rectum nothing could be felt. The urine was slightly albuminous, but otherwise the examination was a negative one, with the exception of a few pus cells. The amount discharged per diem was between fifty and sixty ounces. No urinary salts were found in the pus discharged from the fistulæ.

A curved incision starting from the upper fistula and running through the lower one and anterior rib, somewhat like the one advised by König, was used to expose the parts, but the tissues were so matted together by old inflammatory action as to yield but little room for manipulation. Instead of finding himself, as the way was finally enlarged by stretching and cutting, in the expected cavity of a suppurating kidney or thickened perinephritic abscess, Dr. Weir came down upon a thin-walled cavity larger than his fist through which could be easily felt the movements of the abdominal viscera beyond. Considerable bleeding occurred from the cavity, and it was temporarily stopped with sponges while the fistulous tract in the groin was opened at its terminus just above Poupart's ligament; a second tract was then found running from the first downward to the pelvis, but too far back to be tapped. A drainage tube was placed in each of these tracts, the sponges removed, and the cavity inspected with the aid of the electric lamp. This discovered that a rent three inches long had been made through the membrane so that the

liver and gall-bladder were plainly exposed; this, probably, would not have been detected had it not been for the lamp. It was sewn up with catgut sutures. Careful examination by Dr. Weir and his colleagues failed to find any remains of the kidney, which was also sought for through the peritoneal opening before it was closed.

The exposed cavity was packed with iodoform gauze and the usual peat bag and other antiseptic dressings over all. Death took place four days later with marked rise of temperature commencing about forty-eight hours after operation, with persistent vomiting and almost total suppression of urine.

At the autopsy there were no signs of peritonitis; the left kidney was in a condition of acute suppurative interstitial nephritis and on its surface underneath the capsule pus was diffusely distributed. At the upper border of the tenth rib on the right side surrounded by dense connective tissue was seen the upper third of the right kidney, its lower two-thirds having been destroyed. This kidney stump formed the upper limit of the abscess cavity which had been opened at the operation. In it were found two sponges which had been left *in situ*, one of which was firmly adherent. It should be stated that on the day of his death, the date of the last dressing, the wound was in an odorless condition. This cavity was bounded internally by the duodenum and spine, anteriorly by the ascending colon and hepatic flexure, and below it communicated by a tortuous sinus with a pus cavity in the true pelvis behind and alongside the bladder and rectum, and extended also through the right sacro-sciatic notch and terminated externally to this in a cavity the size of a hen's egg.

The second case of renal surgery was a huge suppurating kidney, for which

NEPHROTOMY

was done. The man, aged thirty-seven, had had, remarkably enough, symptoms of trouble in his side for only four weeks, and these were of moderate severity, but associated with great weakness, and rather rapid emaciation, and no chills, and no special urinary manifestations. In the right flank was a tumor, painful, the size of a coconut, projecting half-way to the ilium, with a deep sense of fluctuation, which the corroborative use of a hypodermic needle proved to be from retained pus. An incision was made, under the idea that the swelling was more probably a perinephritic abscess, from the distal end of the twelfth rib downward, and, instead of reaching evidences of inflammatory thickening as the cut was deepened, only the translucent peritoneum came into view; through which was seen the tumor moving perceptibly up and down under the action of the diaphragm. Another incision at a right angle to the first, and running toward the spine and up to the quadratus muscle, soon exposed the tumor in another place, when the purplish color proved it to be a largely distended kidney. On opening this with a scalpel over eight ounces of fetid yellow pus were discharged, and the finger in exploring could feel sundry depressions corresponding to cavities in the cortical portion of the kidney. It was not washed out, but two large rubber drainage tubes inserted, and dressed antiseptically. Though the discharge at first was very free, and required frequent changes of dressing, it has of late rapidly diminished, and the patient's condition correspondingly im-

proved, though, at times, a strong urinous odor is perceived in the discharge. Occasionally the cavity is washed out with Thiersch's boro-salicylate solution, as safer than carbolic and sublimate solution.

The case, however, that excited the most interest in the whole of the present operative group from its nature, treatment, and result, has been one of

ABDOMINAL NEPHRECTOMY FOR A HUGE ADENOMA,

a disease which has necessitated removal of the kidney in only one (Czerny) of Gross's collection of 49 cases of nephrectomy for neoplasms. Another has since been published by Albert. Czerny's (*Deutsche med. Wochenschrift*, 1881, No. 32) was in the right kidney of a child, eleven months old. Death took place on the second day from peritonitis. Albert's (Brodeur, *De l'intervention Chirurgicale des les Affections du Rein*, 1886, p. 222; also *Wien. med. Presse*, 1885, No. 9) was in a woman, aged forty one, who, two years previously, had had a fall, and subsequently frequent hematuria, etc. Pawlik catheterized the ureters, and differentiated the diagnosis. The tumor, the size of a child's head, was extirpated by a posterior incision. The patient recovered. A third case is also reported by Schönborn (De Jong, *Beiträge zur Nieren extirpation*, Heidelberg, 1885; also *Centralbl. f. Chirurg.*, 1885, S. 24, Beilage). This occurred in a child of three years, and was removed with a successful result.

The present case has the following history. A burly man, a butcher by occupation, was seized suddenly, three years ago, with cutting pain in the left lumbar region, and at that time passed a quantity of bloody urine. This was probably an attack of renal calculus, for other paroxysms came on with not very long intervals, and he frequently noticed gravel to be passed, and indeed, he showed Dr. Weir some fifteen or twenty calculi, principally phosphatic in character, when he was first brought to him by his physician, Dr. Maynard, of this city. In the past year, however, these intermittent attacks have culminated in a persistent pain in the left lumbar region, which is aggravated by sudden motion, by riding, etc. Walking will, moreover, bring on or increase his hematuria. He has lost sixty pounds of flesh in the last two months, and has become blanched from suffering and loss of blood. In the left flank is to be felt a tumor, extending from three inches external to and on a level with the umbilicus, upward and backward under the ribs. This tumor is slightly movable. On bimanual examination the mass seems to be nearly seven inches thick. The amount of urine passed varied from thirty-five to sixty ounces per diem, and on examination showed nothing beyond what might be due to the blood mixed in it.

Under the idea that the kidney enlargement might be due to retained calculi, an exploratory vertical incision, as for nephrotomy, was made in the left loin December 11, 1886, and the kidney, covered only by a thin layer of its fat capsule, exposed by tearing through this. No calculus could be felt, though the posterior surface was pretty thoroughly palpated, and the anterior surface only to a limited degree. A puncture with a needle was made in several places, but did not discover any calculus, nor any cavity. The bleeding was free from the punctures, but easily checked. This examination also showed that the kidney was too much enlarged to

be removed by the usual lumbar incision. It was determined to do nothing further at present, but when the loin wound should have healed that the tumor (for the diagnosis was that of probable sarcoma) should be extirpated by abdominal section. And in the meanwhile, as a corroborative diagnostic means, the quantity of urea daily passed was taken a number of times, as has been suggested by Thiriard, who has noticed that in malignant growths this secretion is materially lessened. It was found in this patient's case to range from 219 to 240 grains per diem.

On the 20th of January, 1887, the patient was again etherized, and by an incision five and a half inches long to the outer side of the left rectus muscle, and starting from the free edge of the ribs, the abdomen was opened, intestines pushed aside with large flat sponges, and the peritoneum covering the tumor incised on the inner side of the descending colon, and the kidney reached. A few minutes' dissection with the finger allowed the root of the kidney to be exposed, when this was easily surrounded with a heavy silk ligature by means of Mott's aneurism needle, and the vessels and ureter tied off *en masse*; a heavy clamp was then applied between the ligature and the kidney, and the latter cut away, and after some tedious tearing of cicatricial adhesions on its posterior surface resulting from the first incision, it was removed. The clamp was then found to have slipped, and allowed a vein which had entered the kidney above the ligature to bleed freely. This showed most happily the control the anterior incision gives in this respect. The bleeding vessel was distinctly seen, and in a moment controlled by a fresh clamp and ligated. Very little blood was lost, though, during the stripping process, which was conducted between the capsule and its fibroadipose envelope for a short time, quite a smart oozing of venous blood took place. A long pair of dressing forceps was then forced from in front through the old cicatrized track to the loin, and a large sized rubber drain carried in from here to the cavity left by the extracted kidney. The divided and torn edges of the peritoneum, which had covered the kidney, were united by numerous Lembert sutures, thus inverting their edges, and after a final toilette of the peritoneal cavity, which was only so in name, as nothing had entered it, it having been so thoroughly protected by the sponges, the parietal peritoneum was sewn together with catgut, and the abdominal wall closed by silver wire sutures supplemented by additional catgut ones. As some oozing of blood persisted from the drainage tube, several yards of sublimate and iodoform bandage were stuffed into the posterior cavity, and over all peat bags and other antiseptic dressings applied.

The patient's progress was extremely satisfactory; no peritoneal symptoms, and only a persistent gulping for seventy-two hours; no attempt was made to put food into the stomach, and for a week nourishment was administered by the rectum. Temperature, at the highest, in the mouth, was 101.7° F. The urine, for the first twenty-four hours, amounted to but eight ounces, and it was very bloody, due to the operative pressure on the kidney. The second twenty-four hours it rose to twenty ounces, and was of a dark amber color, with only traces of blood in it; urea, 1.01 per cent.; sp. gr. 1.020. On the third day it amounted to forty-nine ounces; and on the fourth to eighty-eight ounces; after which it

gradually subsided to about fifty ounces; but the urea still kept lower than normal, but more than before operation. On the sixth day the dressings were changed, and wire sutures removed from the anterior wound, which had healed primarily, and from the posterior opening the gauze bandage stuff was pulled out, everything being sweet and aseptic. On February 8th, the patient was taken out of bed; he now eats heartily, and is on the road to health.

An episode occurred at the termination of the operation that excited some anxiety. On telling the nurse to count her sponges at the close of the operation, she reported that the two flat ones were missing, that there were seven instead of the nine original ones; in a second count, the same result was had, and this original number was corroborated by the superintendent of the training school, who was present. The wound, which was then partially closed, was opened, the hand introduced, and the abdominal cavity hunted over, and Dr. Bull, who was assisting, was requested to verify the search. No sponges were found in the examination, and the closure of the wound was proceeded with. The means for caring for the soiled towels, etc., and for washing sponges, seemed to be so exact, and to be free from possibility of the missing sponges being lost anywhere else than in the patient's belly, that Dr. Weir felt much concern during the first three or four days on this point, being prepared on the first symptom of peritonitis fairly manifesting itself, to open again the abdominal cavity, and resume the search. This feeling was present because, though an examination was found to be negative when made by two surgeons, yet he was conscious of the difficulty of absolutely excluding their presence, as he could not be certain of such regions as the lesser omentum and behind the liver. Events proved, however, that the sponges went elsewhere, although the possibility of organization of an aseptic sponge may be insisted upon by some.

The kidney, when removed, weighed twenty-one ounces, and measured nine by five and a half inches. Its shape was rendered irregular by several projections from its surface, which were marked on its posterior aspect. While the kidney itself was much enlarged, there could be seen after section that its substance had been invaded by an adenoma (as it was pronounced by the pathologist of the hospital) the size of a fist, encroaching upon, but not bursting by ulceration into the pelvis. The mucous membrane of the latter was thickened, and up to the point where severed from the ureter numerous miliary granules were found behind it. Uninvolved kidney tissue was found between the ligature and the tumor.

THE SURGERY OF THE EXTREMITIES

comprises thirty-two operations.

In speaking of the subject of

NECROSIS OF THE LOWER END OF THE FEMUR,

Dr. Weir said that he had made, and seen others also make an error in treating this affection, which he thinks he has now learned to avoid. It is, when much thickening exists at the lower end of the femur not to be content with the piece of exposed dead bone that may be seized and extracted, but to chisel boldly into the thickened end of the bone, even though no opening be found running into it. In very many instances further

trouble may be found existing either in the shape of minute, spiculated, necrosed pieces, or large pieces surrounded by a spongy suppurating involucrum, or even central spongy necrosis, with or without bone abscess running dangerously near the joint line. All these he has found when least expected. He felt warranted, therefore, in urging this point.

In five cases where extensive openings had been made into bones, recourse was had to the suggestion made public by Schede, in 1885, but originated several years earlier by Neuber, and also by Dr. R. T. Morris, of this city, of allowing the cavity to fill up with blood, that this may organize under the antiseptic dressings applied. Either the wound of the soft parts must be sewed up to a small slit, or left entirely open and covered with a layer of gutta-percha tissue, with a hole in it. This is intended to allow the surplus to flow out and also to prevent the dry bandage entirely soaking up the clot. In three out of his five cases (which can be increased to five out of seven, counting two private cases), success was had on the prompt organization of the clot and rapid healing of this wound; that under the old plan of stuffing heals but slowly from the bottom.

ANTISEPTIC IRRIGATION OF THE KNEE-JOINT

with 1:20 carbolic solution, was reported for chronic hydrarthrosis of the knee as successfully treated.

Likewise a quite extensive

CHRONIC TENDO-SYNOVITIS OF THE PERONEAL TENDONS

was treated by opening above and below and drainage without a very satisfactory outcome; the reason therefore being microscopically shown to be, as König has taught us, owing to tubercular infection of the sheath. It will require opening throughout its whole extent, and thorough dissection, scraping and cleaning with subsequent iodoform packing to effect a cure.

RESECTION OF THE WRIST-JOINT,

after Lister's method, had been done for early tubercular arthritis. In this instance more than usual trouble resulted from the hemorrhage so often induced by the use of Esmarch's rubber bandage. The case promises well, though the long pressure to control the bleeding caused a slight cellulitis of the forearm. Dr. Weir has since in one instance put into use, with gratifying effect, the suggestion made at the Society by Dr. Lange, when using the rubber anæmia, that one should control the rush of blood into the limb after the removal of the constricting band by the pressure of an assistant's finger on the main artery above, so that the full blood supply is only gradually admitted to the limb, and in this way permit contraction of the temporarily paralyzed vessels.

RESECTION OF THE ASTRAGALO-SCAPHOID ARTICULATION

was performed four times in two patients for

AGGRAVATED FLATFOOT.

In three of these operations adherence to Ogston's original plan was followed, of shaving off, after opening the joint, the articular cartilages with a chisel, and then fastening the bones together by ivory pegs driven through the scaphoid bone into the astragalus; in the remaining operation, a little more than the articular

cartilage was taken away, and the use of pins was omitted (Stokes's method). The rectified position was maintained easily by a plaster bandage without the support of pegs. The result in the first case, now over four months, is excellent. The last case is too recent to be quoted. Dr. Weir did this for the first time in 1885, in one foot, resorting to, without intending it, Stokes's method—that is to say, removed more than he started out to do, and in the second foot conducted the operation more strictly after Ogston's directions; only he found that his ivory pegs had been soaked all night in sublimate solution, which rendered them so friable that he could not use them, and so he drove in two gilt nails which had been cleaned by scrubbing and immersion in carbolic solution, but were stained by a previous employment in a compound fracture. Whether it was from this or some other cause, the foot went sadly to the bad; the other, without a peg, progressing happily. Severe tarsal inflammation ensued and the young man only got off with a total resection of the scaphoid and astragalus, and parts of the cuboid and os calcis, leaving him, however, in the end a serviceable foot, but prolonging his convalescence for months.

The rather rare operation of

AMPUTATION AT THE HIP-JOINT

was performed by the long anterior and short posterior flap in a man aged forty-six, for huge recurring sarcoma of the soft parts of the left thigh. Beside a large mass reaching nearly to the trochanter in the side and behind, there were several small growths lower down on the face of the thigh. The original removal had been done three years ago by the late Dr. Post, of this city. Recurrence took place within six months of this operation. The main tumor is now some ten inches in diameter. The hemorrhage at the hip amputation was admirably controlled by Lloyd's method, which is to fasten tightly a doubled rubber bandage around the hip so that it rests on the inner side of the tuberosity of the ischium, and its ends are secured above the ilium at about its middle. Pads are placed under the compressing band over the lower end of the external iliac artery and over the sciatic notch. It appears to be the best and least hazardous of the many methods advised to control the blood supply in this high amputation. Next to it in value he places Davy's rectal rod. Not more than two or three ounces of blood were lost in this case. The patient did well without any temperature elevation for forty-eight hours, when signs of gastritis and tympanites came on without diarrhoea, and he died four days after the operation. At the autopsy the stump was found to have progressed satisfactorily. A large aortic aneurism was found and the stomach was studded with patches ranging in size from a silver quarter to a silver dollar, in which the mucous membrane was blackened and destroyed; their edges were sharply defined and of embolic origin, and supposed to have originated from the aneurism. The intestines were distended and much congested in defined areas.

His impression is, that the toxic effect of the bichloride can probably be blamed; at least he conceives that he committed an error which he had in other instances sedulously kept in view. After the stump had been finally closed, to make certain that the two drainage-

tubes were free from coagula, he allowed a 1 : 5000 sublimate solution to flow in through one tube, distend the stump, and to flow out through the other tube, when the dressings, also of sublimate and quite freshly made—*i. e.*, damp—were applied in large quantity. He spoke of this injection of a closed wound as faulty, since he can attribute the production of carbolic acid poisoning to a similar method several years since. The gastric appearances somewhat resembled those shown in a case of death after operation for removal of the uterine appendage, although there frank peritonitis coexisted. In this instance to cleanse the vagina after the use of a tampon, a rather strong sublimate solution was directed by the house surgeon. It is well known that absorption of this drug goes on with special aptitude in the genital passages of the female. Dr. Weir remarked that in spite of the many advantages of corrosive sublimate as an antiseptic, more mishaps had occurred to him in using it than were met with in the days of carbolic acid, and that with iodoform, since he has learned to use it discreetly, no harm has come at all beyond an occasional local irritation.

THE ANTISEPTIC METHOD.

All fresh wounds are irrigated freely with 1 : 5000 or 1 : 10,000 sublimate solution. Catgut, either sublimated or Kocher's, is used. Iodoform when used is either dusted on the line of union of a wound, or on the sublimate gauze or peat bag, which is placed first over the wound. No iodoform gauze (*i. e.*, made by rubbing in iodoform in a sticky gauze of any kind) is employed, except to stuff cavities. Where primary union is sought, it will, if used, often shut up the secretion, and provoke trouble. Where special promptness of union is desired, he much likes to place over the wound a layer of sublimated felted spun glass, a wrinkle of Kümmel's. Over the antiseptic gauze is laid a heavy layer of absorbent cotton, and all secured with sublimated gauze and canton-flannel bandages. Drainage tubes are of rubber; they are kept in a sublimate solution, but they are dipped in iodoform dissolved in ether just before being inserted in a wound. They are removed as early as possible, from the second to the fifth day.

As to the surgeon himself and his assistants; thorough scouring of hands with soft-soap, and subsequent immersion in 1 : 1000 sublimate solution, or 1 : 20 carbolic acid solution, is resorted to. The instruments are scrubbed and boiled, and then put in carbolic solution. Sponges are washed in soft-soap, and kept in strong sublimate solutions, 1 : 2000; all soiled with bad pus or discharges, are at once destroyed.

By mentioning, in closing the list, one case of the very small

OPERATION OF COTTING'S FOR AN INGROWING TOE-NAIL.

it is hoped that the artistic *diminuendo* will be appreciated. Minor operations have purposely been omitted, save in one or two instances where their introduction would justify a remark. The operation of Cotting's often fails, and he has learned from his clinical assistant, Dr. Hartley, how to do it better than he formerly did. He now cuts off much more of the swollen flesh alongside the nail, plunging the knife vertically downward, and sometimes inclining it toward the centre of the toe, so that a generous lump can be taken away, and

the incision should run well back beyond the matrix. An iodoform dressing is applied and over the cotton a firm bandage, and with this the patient can keep on walking with the toe exposed in the shoe. In a week usually the dressing is changed.

Lastly, of the 399 patients treated there were 7 deaths, or 1.75 per cent. mortality, and in each of these an operation had been done; in 5 of the 7, death occurred soon after the operation; in two other cases death resulted some time later, as in the patient with tumor of the brain, who lived two and a half months after the operation; and the case of hernia who died three weeks after the operation from pneumonia and Bright's disease. In the 105 cases operated on, there was 6.66 per cent. mortality.

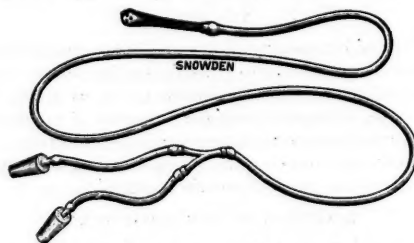
NEW INVENTIONS.

A SIMPLE HOT-WATER VAGINAL DOUCHE.

BY GEORGE ERETY SHOEMAKER, M.D.,
OF PHILADELPHIA.

HOT-WATER vaginal injections now constitute one of the most necessary elements in the treatment of many uterine diseases, yet it is found practically difficult to secure their thorough and systematic application.

If a patient, not under the care of a nurse, be sharply questioned, it will often be found that the general in-



convenience of injections as ordinarily carried out, together with the fatigue to the hand of using a bulb syringe for fifteen or twenty minutes continuously, is such that they are either imperfectly applied, or are often omitted. The accompanying cut represents a simple form of douche, much appreciated by my patients. No fatigue is involved in its use, while the temperature of the water may be regulated at will and constantly increased.

It consists simply of rubber tubing in the form of the letter "Y," armed at one end by an ordinary syringe nozzle, and at the ends of the branches by rubber corks which fit respectively into the hot- and cold-water faucets of the ordinary bath-tub. On properly opening both faucets, water of any desired temperature will run directly through the tubes and will issue from the nozzle. It will occur to anyone that, after changing the nozzle, the instrument may also be used for douching hemorrhoids while the patient is seated over the adjoining closet; vaginal injections should only be administered while the patient lies on the back in the tub, with the hips elevated by a small stool or cushion.

The instrument may be obtained from Mr. Snowden, of this city.

CORRESPONDENCE.

THE PREPARATION OF BLOOD SERUM.

To the Editor of THE MEDICAL NEWS,

SIR: Allow me to add a few remarks to those made by Dr. A. C. Abbott, in THE MEDICAL NEWS of February 19, concerning the preparation of blood-serum. Several years ago I noticed the advantages to be derived from simply sterilizing the liquid blood-serum and not coagulating it until needed. Using the Salmon culture tube, in which the evaporation is reduced to a minimum, I have been able to keep tubes of liquid serum for many months without any appreciable evaporation and concentration. Even with coagulated serum, the water of condensation remains for months in these tubes, and only the upper narrow portion of the medium shrinks somewhat from loss of water. If I were to use the ordinary test-tubes plugged with cotton I should certainly adopt Dr. Abbott's procedure, as the evaporation is exceedingly rapid even in the d'Arsonval thermostat. When serum is kept liquid for some time and then coagulated in the same tube, it is necessary to shake down or break up the thin pellicle of cholesterol which forms after a few weeks. If the serum is solidified without using this precaution, the entire pellicle will form part of the culture surface. This must be detrimental to any bacterial development.

I have not had any trouble in sterilizing blood serum obtained from blood (beef) collected in slaughter-houses. My only precaution to those collecting it was to wait until a considerable quantity had flowed from the wound.

I have found that turbid serum will clear up very well in the laboratory refrigerator. It is not the very low temperature, but its constancy and uniformity that favor subsidence of the blood-corpuscles. This fact is easily brought home to us when a cylinder of very clear serum taken from the refrigerator becomes turbid in a few moments. The change of temperature causes currents in the liquid and consequent rise of the sediment. The precaution taken by Dr. Abbott of packing in ice seems to me very desirable, as it avoids even a suspicion of bacterial growth, besides furnishing a uniform temperature.

Another precaution which physiology teaches us, but which the beginner may overlook, is to avoid a too low temperature while the clot is forming and contracting. That of a good refrigerator seems to be satisfactory.

Very truly,

THEOBALD SMITH, M.D.

DEPT. AGRICULTURE,
WASHINGTON, D. C., March 3, 1887.

NEWS ITEMS.

WET-NURSING AT RANDALL'S ISLAND NURSERY.—During the past two years the experiment has been tried, in consequence of the large mortality that existed at the Randall's Island Nursery, of placing a number of the children from that institution under the care of nursing mothers, at their homes in and near Mount Vernon, Westchester County. The Commissioners of Charities and Correction now keep from fifty to sixty of them in the country, and the death-rate has been reduced

among these infants from thirty per cent. to about five per cent. The cost *per capita* is \$13.50 a month, while at Randall's Island it is \$7.73. The children are under the personal supervision of Dr. Robert T. Howe, of Mount Vernon; and, once a month, the paymaster from the City Controller's Department pays off the women at his office. Additional provision is also to be made at Randall's Island, where a pavilion adjoining the present buildings is to be erected, at a cost of \$25,000. This will accommodate from 1500 to 2000 adults and infants, and will relieve the present overcrowded condition of the Nursery.—*Boston Med. and Surg. Journ.*, March 3, 1887.

ASSES' MILK FOR INFANTS.—The Administration of the Assistance Publique has decided to employ asses' milk at the Hôpital des Enfants Assistés for infants suffering from hereditary contagious diseases. Owing to the dangers incurred by women in nursing such children, the Administration substituted goats' milk for human milk; but the infants did not thrive upon it. The administration has now provided ten asses, which are kept in the stables of the hospital, with their young. Each ass is capable of nourishing three children besides its own young for the first three months, and two children for the two following months. After this period, it is capable of nourishing one child until the ninth month. Eight children are being nourished in this manner at the present time.—*British Medical Journal*, February 19, 1887.

THE INFECTION OF WET-NURSES BY SYPHILITIC SUCKLINGS.—Professor Fournier, of Paris, in a clinical lecture, recently gave the history of a case in which an apparently perfectly healthy wet-nurse became, a fortnight after commencing her duties, the subject of an ulceration on the nipple, subsequently recognized as syphilitic. This, in the meantime, was naturally communicated to the infant. On inquiry, no history of syphilis could be traced, either on the part of the nurse or the parents of the infected infant; but it was ascertained that the nurse had already suckled an infant which had succumbed to symptoms of undoubted syphilis. At the time, therefore, that she accepted the second engagement she was already infected, but the disease was in the period of incubation. Dr. Fournier said he had met with fourteen cases of this description, and advised greater care in the selection of wet-nurses. Two precautions were specially indicated, namely, to engage no woman who had suckled any other than her own child; and if this were not practicable, to require a medical certificate of the last infant's immunity from contagious disease.—*British Med. Journ.*, Feb. 19, 1887.

VENEREAL INFECTION PRONOUNCED A CRIME.—Some consternation may be caused among a certain class by a recent judgment of Justice Wills of the Central Criminal Court, England. The charge against the prisoner was on two counts, one with having carnal knowledge of an imbecile woman, aged eighteen, and another, under 24 and 25 Vict., c. 100, s. 47, for a "fraudulent assault" upon the same woman, occasioning her actual bodily harm. The harm done was the wilful infection with syphilis. The prisoner was found guilty on both heads, and sentenced to two years' imprisonment for the first, and five years for the second. The most remarkable piece of information is that a man who has immoral

sexual connection with a woman, knowing himself to be suffering at the time from gonorrhœa or syphilis, is liable to prosecution and penal servitude.—*Canada Lancet*, March, 1887.

PRESERVATION OF A HUMAN BODY AFTER DEATH.—Indianapolis, Ind., has been considerably excited of late over an instance of remarkable preservation of the human body after death. A lady died in that city some thirty years ago, and her body, incased in an iron coffin, was placed in a vault. A recent examination showed that the body was in a wonderful state of preservation. The *Indiana Pharmacist* says that even the color of her eyes, a deep blue, could be recognized. The hair had grown to a length of two feet. It was supposed by the sexton to have turned to stone, but further investigation showed it to have become changed into that peculiar substance known as adipocere. Adipocere (*adepts*, "fat," and *cera*, "wax") has somewhat the appearance and consistence of cheese, and is a compound of oleic and margaric acids with an alkali. It has usually been formed in bodies that are buried in the earth, and moisture has been supposed to be essential in its formation. In the instance just referred to, the body was in a dry vault. There seems to be no fixed time necessary for this change to take place. One instance is reported of an infant which had been but three months in a cesspool, in which adipocere had formed, while in other cases years seem to have been necessary.—*Science*, January 28, 1887.

AN AMERICAN JOURNAL OF PSYCHOLOGY.—A quarterly journal under the above title will shortly be issued under the editorship of G. STANLEY HALL, Ph.D., Professor of Psychology and Pedagogics in the Johns Hopkins University.

It will contain original contributions of a scientific character; papers from other journals, including translations, and digests and reviews. While articles of importance in allied fields will be welcome, the main object of the journal will be to record the progress of scientific psychology.

CONSUMPTION AND PRICE OF COCAINE.—Dr. Squibb, of Brooklyn, has made and sold 76½ pounds of cocaine since October, 1884, using in the process more than 22,000 pounds of coca leaves. The price has fallen from \$1.25 to 1½ cents per grain.

LABORATORIES IN BARCELONA AND PALERMO.—The Spanish Government intends to erect a laboratory for research in bacteriology in Barcelona, under the control of Ferran.

A Pasteur Institute will be built and equipped by the Italian Government in Palermo, the director of which will be Professor Celli.

AMBULANCES FOR CONTAGIOUS DISEASES IN PARIS.—There has been, for several years, in Paris, a gratuitous service for conveying to the hospitals those ill with the contagious diseases. To obtain such transportation it is only necessary to inform the police, when a telegram is sent to the ambulance, which responds at day or night. Physicians are required, in ordering an ambulance, to specify the nature of the disease with which the patient is affected. These ambulances are well warmed and equipped, and carefully disinfected after each use.

PROFESSOR MIKULICZ, of Krakau, has been called to Königsberg to succeed Professor Schönborn.

A NEW DENTIFRICE.—The *Gazette Hebdomadaire* contains an article by M. Paul Vigier on the "Use of Steatite as a Tooth Powder." Many years back M. Vigier discovered that the addition of powdered talc to water prevented the deposit of calcareous salts in boilers. Applying this fact to dental therapeutics, M. Vigier has devised a new dentifrice, which, he says, prevents the formation of tartar. The formula is as follows: Powdered steatite, fifteen drachms; desiccated alum or cream of tartar, one and a quarter drachms; powdered cochineal, two and a half drachms; essence of peppermint, twenty drops. Any other perfume may, of course, be substituted.—*Lancet*, February 5, 1887.

FRANCESCO MAGNI.—This distinguished Italian ophthalmologist died at San Remo on February 2, 1887, aged fifty-nine. He was Director of the Anatomical School at Florence and afterward Professor of Ophthalmology at Bologna. He travelled extensively, and his contributions to the literature of ophthalmology are able and numerous.

He was also an eminent politician, having been Senator of the Kingdom in 1876, and rendered many services to the cause of State medicine.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 1 TO MARCH 7, 1887.

GREENLEAF, CHARLES A., Major and Surgeon.—Ordered for duty in the office of the Surgeon-General of the Army.—*S. O. 41*, A. G. O., February 18, 1887.

HUNTINGTON, D. L., Major and Surgeon.—Will be relieved from duty in the office of the Surgeon-General, to take effect March 1, 1887.—*S. O. 41*, A. G. O., February 18, 1887.

GRAY, WM. W., Captain and Assistant Surgeon.—Leave of absence for seven days is extended twenty-three days.—*S. O. 13*, Department of Dakota, February 21, 1887.

CASTOR, WM. F., Captain and Assistant Surgeon.—Granted leave of absence for one month on surgeon's certificate of disability.—*S. O. 25*, Department of Texas, February 24, 1887.

JOHNSON, P. W., Captain and Assistant Surgeon.—Ordered for temporary duty at U. S. Military Academy, West Point, New York.—*S. O. 51*, A. G. O., March 4, 1887.

EDIE, GUY L., First Lieutenant and Assistant Surgeon.—Granted leave of absence for one month, to take effect about March 1, 1887.—*S. O. 27*, Department of Texas, February 28, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE FIVE WEEKS ENDING MARCH 5, 1887.

GUITERAS, JOHN, Passed Assistant Surgeon.—Granted leave of absence for twenty-one days, February 28, 1887.

PETTUS, W. J., Assistant Surgeon.—To proceed to Charleston, South Carolina, for temporary duty, February 28, 1887.

THE MEDICAL NEWS will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.

Local papers containing reports or news items should be marked. Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS should be addressed to No. 1004 Walnut Street, Philadelphia.